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THE AMERICAN ECONOMIC REVIEW

BERNARD F. HALEY, Managing Editor
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BOOK REVIEWS

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R DEPARTMENTS

Number 60 of a series of photographs of past presidents of the Association



George W. Stocking

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INSTITUTIONAL FACTORS IN ECONOMIC THINKING

By George W. Stocking*

Economists are indebted to Thorstein Veblen for his emphasis on the role that institutional factors play in economic thinking. To Veblen, what economists believed and had to say about the operation of economic forces in a price system was essentially a logical formulation of the preconceptions and observations of those whose daily lives were subjected to the impact of the system. As he expressed it, "The higher theoretical knowledge, that body of tenets which rises to the dignity of a philosophical or scientific system . . . is a complex of habits of thought which reflect the habits of life embodied in the institutional structure of society . . ." [31, p. 44]. More specifically, about classical theory Veblen said: "In the days of the early classical writers economics had a vital interest for the layman of the time, because it formulated the commonsense metaphysics of the time in its application to a department of human life" [31, p. 69].

Wesley Clair Mitchell, close friend and admirer of Veblen, expressed a similar thought throughout his brilliant lectures on types of economic theory at Columbia University. Economic doctrines, he told his students, represent intellectual responses to ever-changing economic problems. The problems economists think about and the way they think about them are determined by the institutional matrix in which they find themselves. Around this idea he built his course in the development of economic thought from Adam Smith to John R. Commons.

As a background for a similar interpretation of current economic thinking, I shall lean heavily upon what Mitchell had to say about what Adam Smith taught and why he taught it.

Smith was primarily a political economist, not an economic logician. It is true that he formulated principles governing the determination of

* Presidential address delivered at the Seventy-first Annual Meeting of the American Economic Association, Chicago, Ill., December 28, 1958. The author is grateful to his colleague, Elizabeth R. Post, and to C. A. Stocking, I. H. Siegel, and G. H. Hildebrand for reading a draft of this paper critically. It has been improved by such of their suggestions as he has adopted.

prices, the economic allocation of resources, the distribution of income, the geographic division of labor, and economic progress, and in doing so he laid the basis for late-nineteenth-century neoclassicism. But he formulated these principles as one profoundly concerned with public policy, and it is the policy implications of his principles and the persuasive manner in which he expounded them that make *The Wealth of Nations* one of the great books of all time. On public-policy issues he spoke with the knowledge of a keen observer of contemporary affairs, the wisdom of a profound philosopher, and the convictions of a great moralist. He was concerned not so much with the discovery of new truths as with the application of sound principles in determining the proper limits of governmental activity, and it was essentially a negative policy that he advocated. That negative policy was a reaction both against the teachings of the mercantilists and against the web of administrative controls in which the economic activity of the sixteenth and seventeenth centuries had been enmeshed. But when he expounded his ideas the strands of this web had already been greatly weakened by economic forces set loose by the rise of capitalism, the accelerated pace of technological innovation, and the development of the factory system.

I. *The Classic Norm: Economic Individualism*

Smith, in defending economic individualism as a means of promoting the national welfare, conceived of the national income as the aggregate of individual incomes. As he put it, "the annual revenue of every society is always precisely equal to the exchangeable value of the whole annual produce of its industry, or rather is precisely the same thing with that exchangeable value" [26, p. 423]. The way to maximize it is to let individuals maximize their own income in their own way. He recognized, of course, that no individual is primarily concerned with promoting the general welfare. Of this he said,

> By preferring the support of domestic to that of foreign industry, [every individual] intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention [26, p. 423].

Promotion of the general welfare is a proper goal of statesmen, and they can achieve it by the abolition of all needless restrictions on economic activity. As Smith put it,

> All systems either of preference or of restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not

violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men [26, p. 651].[1]

These are doctrines with which, of course, we are all familiar. What we sometimes overlook is that Smith in his exposition of economic liberalism was the spokesman of an age that needed little persuasion to accept his doctrines. Smith's was an age in which the individual had acquired an institutional significance characteristic of no previous age in English history. In the entire culture of the period the individual had acquired a new importance as innovator, initiator, and doer. Man had assumed responsibility for his own destiny and hence for society's destiny, particularly in economic affairs. The ideas Smith so brilliantly reduced to a systematic philosophy were not novel to the rapidly increasing and increasingly important enterpreneurial class of his time. Although Smith never engaged in business, during his sojourn in Glasgow he associated intimately and continuously with businessmen. Glasgow at that time was a thriving commercial and manufacturing center whose industrial progress would have been gratifying to any modern Chamber of Commerce. Nor were the businessmen, who were largely responsible for its vigorous activity, indifferent to policy questions. The more alert and public-spirited townsmen conducted a weekly discussion club expressly designed to inquire into the nature and principles of trade. Smith as a member made weekly contacts over a number of years with an informed and articulate group of businessmen who had assumed responsibility for the conduct of economic affairs. Smith's interest in economic problems may well have stemmed from these associations, and his ideas about these problems no doubt were shaped in part by them.

No society is static. As E. Lipson, the economic historian, has said: "Every social system contains within itself the seeds of its own decay; it is always dissolving and reforming in an infinite sequence" [18, p. 15]. While Smith was writing *The Wealth of Nations,* mercantilism, the folly of which Smith so lucidly and logically exposed, was already dissolving, and individualistic capitalism, the next sequence in the inexorable march of economic change, had already passed its adolescence. The restraints on the movement of labor, the restrictive rules of apprenticeship, the prohibition of exports, and the tariff on imports—the whole scheme of mercantilist controls was already obsolete and was rapidly passing into the limbo of outworn notions. Smith gave it a push, but economic forces propelled it as no philosopher, however potent his pen, could have done.

[1] Smith, of course, was wise and humane enough to recognize the limitations of competition as a means of promoting the general welfare and to assign important functions to the state.

The corporate structure of mercantilist society, with its village courts, its merchant and craft guilds, and its monopolistic overseas trading companies, had already largely dissolved under the disintegrating influence of widespread and persistent individualism. Men insisted on their freedom to engage in enterprise unshackled by arbitrary controls. The rise of the spirit of individual initiative in economic affairs—a spirit embodied in the entrepreneur or "undertaker" as Smith called him—was, of course, a gradual process that had its beginning in the late Middle Ages, but it had already achieved considerable maturity by 1776. Individual entrepreneurship was the characteristic institution around which economic activity revolved, by which economic resources were allocated and production was organized, and through which the several factors of production received their rewards.

Lipson described this process with an eloquence rare in economic writings and a fidelity to the facts of English industrial development not always achieved by those who interpret broad movements in history. He showed that in industry, agriculture, and trade the "spirited pioneers of a brave new world," as he characterized the economic leaders of that era, created business opportunities that were previously nonexistent, or quickly seized them as they appeared and thereby aided in the creation of an industrial environment at once challenging and rewarding to the entrepreneur. On every score Lipson found evidence of the capitalist spirit as manifest in the conception and carrying out of speculative endeavors. Great captains of industry were relatively scarce, but the single entrepreneur who put his own and sometimes other people's money into business enterprises for profit was characteristic of the era. Individual innovators, while playing a supplementary role to entrepreneurs, aided them by demonstrating the practicality of their inventions. The men whose inventions revolutionized the textile industry in the eighteenth century are household names—Hargreaves with his spinning jenny in 1767, Arkwright with his water frame in 1768, Crompton with his cotton mule in 1775, and Watt with his steam engine in 1782. In some instances a single individual combined the roles of entrepreneur and innovator. Arkwright, who was a barber and wigmaker, secured the services of a clockmaker, a blacksmith, and a watch-toolmaker to improve an early model of a cotton spinning machine and together with other persons invested £12,000 between 1771 and 1774 in the erection and operation of a cotton mill [30, pp. 294-95]. Abraham Darby, who was the first ironmaker to use coke instead of charcoal in iron smelting, erected 7 furnaces, which by 1756 were producing 20 to 22 tons of iron a week. The Duke of Bridgwater constructed canals to transport coal from his colliery to markets at Manchester and Liverpool.

In agriculture no less than in industry and commerce, the private individual stands out as the innovator and enterpriser. We are all familiar with the contributions to scientific farming made by Jethro Tull, Lord Townshend, and other giants of the era. What we frequently overlook is that a host of small farmers were experimenting with crop rotation and better breeding of livestock. The few names that stand out so strikingly are a reflection of a development common to all English agriculture.

But not only in economic affairs and in the advance of technology did the phenomenon of individualism manifest itself. Mitchell portrayed to his students in a striking manner the extent to which the spirit of individual enterprise and initiative permeated the whole cultural fabric of eighteenth-century England. Individuals, frequently of humble origin but always of unusual talent, imagination, and enterprise, raised the level of cultural achievement throughout its whole range. The fine arts, literature, historical writing, journalism, the law, religion, philanthropy, education—all felt the impact of individuals of great intelligence and vision who dedicated themselves to the transforming of ideas into reality. William Hogarth, son of a schoolmaster, used painting as a medium for the pointing of a moral and the telling of a tale, creating his own art by using color instead of language. Joshua Reynolds, also the son of a schoolmaster, and Thomas Gainsborough brought portraiture to new heights. In recognition of his achievement Reynolds became the first president of the Royal Academy. Daniel Defoe (1661-1731), the son of a butcher, in *Robinson Crusoe*, Samuel Richardson (1689-1761), the son of a London woodworker, in *Pamela* and *Clarissa Harlowe*, and Henry Fielding (1707-1754) in *Tom Jones* by the middle of the eighteenth century had given shape to a new form of writing, the modern English novel. James Boswell in his classic *Life of Samuel Johnson* was the creator of a new type of biography that portrayed the life of his subject in an unusually intimate and effective manner. David Hume wrote his *History of England*, William Robertson his *History of Scotland during the Reigns of Queen Mary and King James VI*, and Edward Gibbon his *Decline and Fall of the Roman Empire*, all "models of exposition concerning the past of the race" that, as Mitchell observed, carried a different appeal and suggested a different outlook on life from previous histories.

The eighteenth century witnessed the beginnings of modern journalism with the publication of newspapers combining the functions of reporting news and selling advertising. The *Morning Post* appeared in 1772, the *London Times* in 1788, and the *Morning Advertiser* in 1794. These had been preceded earlier in the century by a series of periodi-

cals such as the *Spectator*, the *Tatler*, and the *Guardian*, influential in both politics and literature. It was in the eighteenth century that Lord Mansfield, Chief Justice of England, organized the commercial law of Great Britain and introduced important innovations in legal practice. It was in the eighteenth century that Sir William Blackstone wrote his *Commentaries*, which remained a leading legal textbook until our own century. In philanthropy James Oglethorpe promoted his scheme for colonizing Georgia with condemned criminals, confident that a wholesome environment would make of them wholesome citizens. The eighteenth century witnessed the beginnings of prison reform under the leadership of John Howard and the movement to protect children from exploitation, led by Jonas Hanway.

Stephen Hales, regarded as the father of plant physiology; John Roebuck, who introduced the use of lead condensing chambers in making sulphuric acid; Henry Cavendish, the discover of hydrogen as a chemical element, the first to combine hydrogen and oxygen to make water, and the first to devise an accurate method of weighing the earth; and John Priestley, the first to discover the decomposition of ammonia by electricity and the first to describe the properties of ammonia, nitrous acid, sulphur dioxide, hydrogen sulphide, and carbon monoxide—all were eighteenth-century scientists. Their achievements in these various fields manifested a spirit of individualism that strongly marked the whole of eighteenth-century England. Finally, what Mitchell called government by public discussion replaced the arbitrary and often irresponsible rule of sovereigns. In Parliament, in vestry meetings, in drawing rooms and social clubs, in coffee houses and taverns, people discussed public issues in a lively and critical manner. In these forums a public opinion crystallized, influential in both political and economic affairs. The eighteenth century in England was truly a century in which individualism was a mass phenomenon. The English historian G. M. Trevelyan has aptly characterized it as "an age of aristocracy and liberty . . . of individual initiative and institutional decay . . . of creative vigor in all the trades and arts that serve and adorn the life of man" [28, p. 339].

It was in this social milieu, this institutional matrix, that the father of political economy conceived his philosophy that the way to maximize national income and promote national welfare was to leave individuals unhampered in their economic activity, free to choose their own occupations without the restrictions of a socially enforced apprenticeship, free to organize and operate business enterprise without state subsidies or state direction, and free to buy and sell in any market without interference from local and national governments.

In short, Smith's economic liberalism, "seeking to vindicate the

right of the individual to shape his own destiny," was a product of his age. It reflected a mode of thinking that was manifest in politics, in religion, in the arts, in science, in commerce and industry—a spirit that had permeated the whole fabric of eighteenth-century English society.[3] It has been said that no economist has encompassed his age so thoroughly as did Adam Smith. It is perhaps equally true that no economist was so encompassed by his age as was Adam Smith.

Nothing pleases the educated mind so much as the systematic, philosophical expression of ideas with which it is familiar and which it deems good, by one whose eloquence, erudition, and profundity it can scarcely hope to achieve. *The Wealth of Nations* had a following waiting to be led. Before Smith's death it had run through five editions; by the end of the eighteenth century it had been translated into five foreign languages and had been pirated in Ireland. It was discussed in drawing rooms and quoted by parliamentarians. Many of the restrictions against which it complained were embodied in laws and regulations that had largely become dead letters; nevertheless, it was not until well into the nineteenth century that Parliament wiped off the statute books the last of the mercantilistic measures and officially embraced free trade in international commerce. In doing so it responded not so much to what anybody had written as to what nearly everybody who counted thought. The success of the free-trade movement was a belated recognition of the fact that England's industry and manufacturing were the world's best and that the interests of English businessmen demanded free access to markets and raw materials.

II. *The Organizational Revolution*

But economic individualism, the philosophical product of individualistic capitalism, had no sooner conquered men's minds than the great transformation was ushering in the next sequence in the inexorable flow of institutions and ideas. Corporate capitalism was soon to replace individual capitalism as the characteristic institution of a mechanized factory system, geared to mass-production methods and utilizing the sciences of chemistry and physics for utilitarian ends. The business corporation was soon to become the epicenter of an organizational revolution of earthquake proportions. Just as the individual and individualism dominated eighteenth-century society, so the organization has come to dominate twentieth-century society. In nearly all areas of twentieth-century social and intellectual life—business, sports, re-

[3] Throughout the eighteenth century individualism also found in the American colonies an environment peculiarly suited to its development. Under the leveling influence of the frontier, the Western ideals of individual freedom and equality flourished. The Declaration of Independence may appropriately be regarded as a political counterpart of *The Wealth of Nations*.

ligion, philanthropy, civil liberties, education, communication, the arts —the organization has replaced the individual as an institution for promoting enterprise and getting things done. At the center of this organizational revolution is the business corporation.

Smith's well-known skepticism of the corporation as an entrepreneurial device for carrying on economic activity was reflected in early American attitudes. The first American work on political economy, published in 1820, regarded nongovernmental corporations as "*prima facie,* injurious to national wealth" and as institutions that should "be looked upon by those who have no money, with jealousy and suspicion." "They are," said Daniel Raymond,

> and ought to be considered, as artificial engines of power, contrived by the rich, for the purpose of increasing their already too great ascendency, and calculated to destroy that natural equality among men, which God has ordained, and which no government has a right to lend its power in destroying. The tendency of such institutions is to cause a more unequal division of property, and a greater inequality among men, than would otherwise take place . . . [21, p. 429].

In 1840 the governor of Massachusetts, where most of the existing corporations were then doing business, in a message to the Great and General Court said of them:

> These societies are one of the vices of our time. They encourage speculation and fraud, mobilize landed property, overturn matrimonial arrangements, escape publicity in the transfer of real property, diminish the sense of individual responsibility, create property in mortmain, prevent all penal remedies, are lacking in moral sense, and constitute finally a grave social peril by concentrating too much power in the hands of certain of our citizens [22, p. 22].

Such ideas today sound quaint indeed. Today the corporation is regarded as the master business institution, essential to the effective utilization and progressive development of modern technology and responsible for the high standard of material welfare and prosperity that, with temporary interruptions, has characterized American society for the past half century. This change in attitude has paralleled the remarkable growth of corporate enterprise, both in the scope and magnitude of its operations and in the frequency with which it has been utilized.

The modern corporation, it should be noted, is a man-made institution, made legally possible as the states have liberalized their incorporation laws in response to the demands of businessmen, or lawyers who have spoken for them. With its perpetual existence, the almost unlimited scope of its legitimate activities, the limited liability of its

legal but absentee owners, the continuity of its management, and its legal autonomy, it has afforded almost an ideal instrument for carrying on large-scale production and larger-scale business enterprise. It has made possible three great combination or merger movements that have changed the structure of American industry: the merger movement between 1897 and 1903, the merger movement of the 1920's, and the current merger movement, in progress since the close of the second world war. Economists have differed sharply as to the effect of these movements on competition, and less sharply as to their effect on industrial concentration. On the latter issue the differences of opinion that existed a few years ago now seem largely reconciled. No student of industrial history will challenge the statement that at the turn of the century the Great Combination Movement concentrated the output of many basic industries in a smaller number of firms than had previously controlled it. In truth it would seem no exaggeration to say that no other period of industrial history, in a time so brief, has experienced so great a transformation in the structure of industry. Similarly, most students accept the findings of Berle and Means that in the period from 1924 to 1929 the assets of the 200 largest business corporations increased more rapidly than the assets of all other business corporations [8, p. 35]. Morris Adelman's study [1] revealed a decrease in industrial concentration from 1933 to 1947, but the merger movement of the current decade has reversed that trend.[3]

A significant characteristic of the merger movements is that each has taken place in the face of a law designed to prevent it. The Sherman Act voiced the fear of a rural and small-town citizenry that combinations threatened the opportunity and even the survival of the small businessman and endangered the welfare of the farmer. Despite its comprehensive prohibition of every combination in restraint of trade regardless of the form it took, the Sherman Act proved helpless to stay the movement inaugurated by the trusts of the 1880's and carried to completion by the corporations of the 1890's. The merger movement of the 1920's followed on the heels of a Congressional effort to make good the deficiencies of the Sherman Act; Section 7 of the Clayton Act prohibited the acquisition of stock by one corporation in another where the effect would be to lessen competition between the two companies.

[3] Census figures show a slight increase in concentration between 1947 and 1954 for industries producing specialized products [23], and that in 1954 the country's 200 largest companies accounted for 37 per cent of the total value added by manufacture as against 30 per cent in 1947 [25, p. 11]. Adelman, who in his 1951 study [1] was severely critical of the measurements of industrial concentration employed by the Federal Trade Commission, defends the Census statistics as "a valuable addition to our stock of basic information" and "sound in concept"; but he misreads them as showing that "Concentration did not increase from 1947 to 1954" [2].

And the merger movement of the 1950's has steadily progressed in the face of the Celler-Kefauver amendment to Section 7 of the Clayton Act, which was designed to stop it.

That the combination movement has proceeded apace while an articulate minority has tried to stem it reflects, I believe, the wholehearted acceptance of the modern corporation by contemporary society. In manufacturing, mining, wholesaling, indeed in the whole range of economic activities loosely designated by the term industry, corporate enterprise has replaced the individual entrepreneur as a characteristic business institution.[4]

The several combination movements have resulted from complex causes, but they have all represented in greater or less degree a quest by business for security. Business firms have sought through mergers to isolate themselves from the vagaries of the market. The industrial combination movement has been paralleled by the growth of powerful labor unions that, whatever their incidental benefit to individual workers, have had as their primary goal the sale of labor under noncompetitive conditions.

The use of the organization as an instrument for carrying on activity has not been confined to business and labor. To an impressive extent it has supplanted the individual in the educational and cultural areas of American life: science, creative scholarship, sports, philanthropy, religion, civil liberties, and the like.

The growth of knowledge is essentially a social process in which each generation starts with the accumulated wisdom of previous ages. Although a single generation's contribution may bulk large in comparison with that of any previous generation, at any one time it represents but a small part of society's total knowledge. While the accumulation of knowledge is a social process, traditionally it has been kept going by the discoveries of skeptical and inquiring individuals. The United States patent policy was based on this idea. To promote the progress of science and useful arts the Constitution provides that an inventor may have an exclusive right to his discoveries for a limited time under terms laid down by Congress. The Constitution, as a political instrument reflecting the influence of eighteenth-century individualism, contemplates that the rewards of technological improvement shall go to the individual inventor. It makes no provision for teamwork or group

[4] In emphasizing the role of the modern corporation as an organizational force in American industry and the extent to which it has supplanted the individual entrepreneur, I am not unmindful that the corporation has frequently been the means by which ambitious individuals have enhanced their power and influence, or of the fact that in eighteenth-century England the individual entrepreneur "organized" economic activity in the process of production. The change in the status of the individual in economic activity might be regarded as one of degree, but it is so great as to constitute a major change in institutional arrangements.

enterprise in the inventive process. Just as the modern corporation has replaced the individual as coordinator of production and manager of business, so invention has become a group process. Research teams working in well-equipped laboratories under centralized guidance and according to well-defined plans have largely replaced the lone investigator whose research was circumscribed only by his curiosity, his intellectual ability, and his imagination. Corporations have sought to discover and foster not the individual inventor but the well-rounded scientist, loyal to the organization and willing to subordinate his personal interests to group interests and to gear his endeavors to those of like-minded colleagues, interested in discovering new ways of applying existing knowledge to the commercialization of new products and processes rather than in carrying on basic research. The following statement by an executive of a large industrial corporation illustrates the trend towards group activity: "Except in certain research assignments, few specialists in a large company ever work alone. There is little room for virtuoso performances" [33, p. 214].

The federal government, which directly and indirectly through tax policy has become the chief sponsor and financier of research activities, has greatly accelerated the shift to teamwork in research directed toward practical ends. In research contracts that government agencies awarded in 1953, 1954, and 1955, 93 per cent of the $5.6 billion total went to applied rather than fundamental research [33, p. 218]. It is a reasonable assumption that virtually all was spent on corporate or other group projects, rather than on research by individual investigators. John H. Troll, physicist and vice president of Electronics Corporation of America, commenting on the government's subsidizing private research in defense contracts, had this to say:

> This approach has debilitated all government research facilities, leaving research and development vital to our defense to be performed under contracts by private firms, under a system that leads to the selection of contractors on the basis of size and financial status rather than scientific capability. This in turn has brought about an "organization man" approach to research that destroys individual creativity in the scientist by leading to a sort of creeping collectivism more usually associated with the Soviet Union [29, p. 22].

Philanthropic foundations confronted with the task of giving away hundreds of millions of dollars have generally found it convenient to support carefully designed research projects involving the joint effort of groups rather than the work of single scholars. The scholar who requests financial aid for his research lacks the glamor of a "big operation"; his only qualifications may be a talent for research, a thirst for knowledge, and an insatiable curiosity. As a former founda-

tion administrator expressed it, "The foundations in assisting research have suffered from chronic 'projectitus.'"

Sports, religion, and philanthropy have similarly succumbed to the organizational revolution. Baseball, the great American pastime, was formerly regarded as an outlet for the play impulses of the American youth, a form of exercise and recreation useful in developing muscular coordination, manual dexterity, and mental agility. It still affords an opportunity for the display of individual prowess, but currently it has become an organized business activity in which a handful of individuals are paid to participate and millions pay to watch. Baseball teams are owned by groups of businessmen who operate them as business enterprises under franchises carrying valuable privileges. In the big leagues—around which many satellite leagues operate, primarily as feeders to the larger affiliate—the freedom of a player to pursue his career has given way to a set of rules governing the sale and purchase of all players—rules formulated in response to the business needs of the organization.

The Protestant Reformation freed the seventeenth-century individual from the supervision of an ecclesiastical hierarchy and placed upon him the responsibility of answering for himself the awesome question, "What must I do to be saved?" In contrast, twentieth-century salvation has become a group enterprise. Billy Graham is not merely a dynamic, unusually persuasive servant of God carrying Christ's message to lost and sinful souls, but he is the central figure in an organization created to carry on God's work through a series of carefully planned campaigns, locally directed by groups of religious leaders and businessmen who have been organized by an advance team of professional promotors. In the nightly battle for the Lord, Graham is assisted by a corps of ushers, advisers, and counsellors skilled in the techniques of mass salvation. In the language of a caustic commentator, Graham "operates an assembly line of faith" [14, p. 199], geared to handle hundreds of souls in a single night.

Philanthropy has traditionally been an individual enterprise, a matter of the heart. People actuated by the Christian spirit have helped those who are less fortunate. Charity frequently has expressed a personal relationship between giver and recipient. Today the United Givers Fund or the Community Chest is the official organization for the dispensation of the Lord's largesse. The organizations collect contributions not as voluntary gifts individually and spontaneously given but through well-organized teams with captains, lieutenants, subordinate officers, and privates organized to collect their quotas from the groups assigned to them. The appropriate size of each contribution may be suggested by a central agency as a fixed percentage of the

giver's salary. Total contributions are dispersed through intermediary organizations to the ultimate beneficiaries. The giver need never know where the gift goes, nor the beneficiary from whence it comes.

The selection of books at one time was regarded as a matter of individual choice requiring, for some readers at least, the most discriminating judgment. As an indicator of the man himself, Ben Jonson ranked a man's choice of books with his choice of friends.[5] The organizational revolution has changed all this. Beginning with the Book-of-the-Month Club in 1926 [32, p. 5], some eighty-nine commercial book clubs [4, p. 101] have been organized which, in the words of a commentator, "for yearly fees, not only relieve their subscribers of the physical exertion incidental to purchasing books, but even free them from the mental anguish of making selections" [16, p. 233]. Between 1954 and 1956 sales of adult trade books increased by only 4 per cent while sales of book-club books increased by 25 per cent [4, p. 87]. The Business Leaders' Book Club, the Educator's Book Club, the Farmers' Book Club, the Science Book Club, the Sportsman's Book Club, and the others all undertake to provide their members with books suitable to readers of a certain type; and for those who can't recognize their own type but want to buy the right book, membership can be had in Best-in-Books.

The contrast I have been illustrating between the role of the individual in eighteenth-century society and his role in twentieth-century society is sharply revealed by comparing Patrick Henry's and the American Civil Liberties Union's conceptions of the nature of the fight for civil liberties. In 1775 Patrick Henry uttered his immortal words, "Is life so dear or peace so sweet as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take, but as for me, give me liberty or give me death." In the 1950's the American Civil Liberties Union has this to say of its own work: "The American Civil Liberties Union is the only permanent non-partisan organization defending the Bill of Rights for all—without distinction or compromise" [3, back covers].

But to recount these well-known facts on the decline of individualism is not to decry them. It is merely to indicate something of the scope and impact of the organizational revolution.

III. *Economists and the Organizational Revolution*

With the organizational revolution affecting virtually every phase of American culture and most significantly the economic sector, it would have been strange indeed had not the thinking of American

[5] "When I would know thee . . . my thought looks
Upon thy well-made choice of friends and books" [17, 8, 190].

economists been affected by it. As the neoclassical economists reconciled and refined the doctrines of the classical and utilitarian schools, the doctrines gained in precision and validity of logic but lost in relevance. So much so that Piero Sraffa as early as 1926 characterized current price theory as

> . . . essentially a pedagogic instrument, somewhat like the study of the classics, and, unlike the study of the exact sciences and law, its purposes are exclusively those of training the mind, for which reason it is hardly apt to excite the passions of men, even academical men . . . [27, pp. 535-36].

In 1942 Joseph Schumpeter, commenting in a similar vein on the proposition that under perfect competition the profit motive among businessmen tends to maximize production, remarked that "in the process of being more correctly stated and proved, the proposition lost much of its content—it does emerge from the operation, to be sure, but it emerges emaciated, barely alive" [24, p. 77].

The response of American economists to the far-reaching institutional changes I have referred to was to reconstruct price theory to make it more relevant to the structure and functioning of American industry. Edward Chamberlin [11] tried systematically to revitalize it. J. M. Clark [12], J. A. Schumpeter [24], E. G. Nourse [19], J. K. Galbraith [13], and others have in less comprehensive but equally significant ways contributed to contemporary notions of how price is determined and how it functions when large business units by reason of their size or the differentiation of their products have power over prices and output. Except for the contribution of Chamberlin, who is interested in pure theory and approaches the price problem from a highly abstract level, the most significant aspect of these contributions to current economic thinking is that despite marked differences in the details of their logic, they all find in the industrial structure an institutional arrangement compatible with the effective functioning of the economy. And so do their many followers—the expounders of the New Competition. Just as Smith in an age of individualism regarded *laissez-faire* competition as an instrument for harmonizing man's greed with the general welfare, so these economists have discovered forces in the contemporary organization and structure of industry that if left alone will promote the public welfare.

Clark is not disturbed by the contemporary industrial structure because, despite its oligopolistic business units, he views potential competition and the competition of substitutes as checks upon their power, which, although not perfect, may result in long-run prices that will closely approach those of pure competition. He also finds

that in industries of large fixed costs, short-run marginal-cost pricing would prove disastrous. He concludes his discussion of the concept of workable competition with the optimistic but guarded "hope that government need not assume the burden of doing something about *every* departure from the model of perfect competition" [12, p. 256].

Nourse in his *Price Making in a Democracy* [19] assumes that the structure of industry and the economies of mass production inevitably give to large firms power over the market; but he believes that if businessmen can be made to see their long-run interest in sustained profits and a stable economy, they will deliberately pass on to consumers in the form of lower prices the gains made possible by advanced technology. "We can only hope," he says,

> that the ultimate intellectual judgment of private businessmen will be not merely that responsibility is the best policy in the limited terms in which it has already been put in practice and validated by experience but also in that broader and more comprehensive interpretation of responsibility that requires the individual businessman to follow practices that sustain the sources of general prosperity [19, p. 446].

Despite the treacherous bypaths of monopoly and the pitfalls of short-run profits, Nourse looks to the "invisible hand" to harness the selfishness of the leaders of corporate enterprise and direct it to the general good. As he expresses it, "Adam Smith's recognition of self-interest as a perennial and dependable spring of human conduct is as true today as it was in his time" [19, p. 449].

Galbraith [13], while in agreement with Nourse that the economies of mass production make inevitable an industrial organization that if not checked places monopoly power in the hands of businessmen, does not look to the wisdom and restraint of those who have power to insure that they will not misuse it. On the contrary he thinks that power over the market tends to breed a countervailing power that will limit the original power so that it can do no public harm. Where countervailing power does not spontaneously develop, it is the government's duty to create it. Galbraith envisages eventually a society made up wholly of power blocs arrayed against each other, and he relies on their conflicting interests to promote the public welfare.

Schumpeter [24] believed that the essence of modern capitalism is its dynamic character. Forces inherent in it are constantly undermining any strategic advantage that a monopoly may temporarily acquire. Better processes and products are constantly replacing those that may be temporarily monopolized. Temporary monopoly itself promotes the general welfare, for it gives a security to investments without which they might not be made. The "perennial gale of cre-

ative destruction" [24, p. 84] is a force before which monopoly must disintegrate, and its winds bring better products, more productive processes, more economical sources of raw materials, and more efficient forms of business organization. Schumpeter regarded the Great Combination Movement, which radically changed the structure of industry at the close of the century, as a manifestation of this perennial gale without which the full productive potentiality of capitalism could not have been realized. Schumpeter left little place in his scheme of things for an antitrust policy; he seemed to regard it as a sort of sniping operation, which might annoy and embarrass businessmen but by itself would prove powerless to stay what he regarded as the forces of progress.

This brief résumé of the doctrines of contemporary American economists who have concerned themselves with the functioning of a price system characterized by monopolistic competition is, of course, inadequate to do justice to the details of their logic, which at times is both profound and brilliant and which has validity in its application to some industrial situations. There is something of truth in what each says, and much of truth in what some of them say. Their common ground, however, is that they all think much alike with regard to the workability of the contemporary economic system—a system whose structure is the product of an organizational revolution that has embraced virtually every aspect of American culture. That they think this way is, I believe, a reflection of the influence of the *Zeitgeist* on economic thinking.

But theorists concerned with industrial structure have a greater obligation to society than to discover that its economy works well. As political economists we should be interested in understanding the forces that have shaped our economic system and may determine its destiny; and we should know more about how it works than the proponents of workable competition have told us. On the latter point we can learn something from what corporate executives or their spokesmen have to say on the question of power and social responsibility.

Business leaders recognize what some economists are loath to see, and they acknowledge by indirection what economists often deny—that the modern corporation's relative size, the scale on which it buys and sells, and its investment policy may give it power over particular markets or over the whole economy. Having power, corporate executives are asking themselves what are their social responsibilities in using it. In answering this question they acknowledge obligations to the corporation itself, its shareholders, its employees, the consuming public, and the whole economy. Business leaders today are beginning to think of themselves as stewards in whose hands rests the economic

welfare of society. The late chairman of the Johns-Manville Corporation put it this way:

> In the evolution of a complex industrial society the social responsibility of management has broadened correspondingly. Management no longer represents, as it once did, merely the *single* interest of ownership; increasingly it functions on the basis of a *trusteeship* which endeavors to maintain, between four basic interlocking groups, a proper balance of equity. Today the executive head of every business is accountable not only to his shareholders, but to the members of his working organization, to his customers, and to the public [9, p. 49].

Fortune, the magazine of big business, tells us that "one of the most obvious yet least recognized facts of our time is that the large corporation is becoming one of free society's major instruments of economic justice" [10, p. 98]. On the question of the corporation's social responsibility, Frank W. Pierce, a director of what *Fortune* regards as America's model corporation, the Standard Oil Company (New Jersey), states that "it is becoming clear that in our modern society top management has the opportunity—in fact, I should say the duty—to act as a balance wheel in relation to three groups of interests—the interests of owners, of employees, and of the public, all of whom have a stake in the output of industry" [9, p. 51, n. 8].[6]

Not only does the modern corporation recognize its obligation to the public, but it conceives that obligation broadly. It has for some time been a self-appointed guardian of private enterprise and has engaged in an educational campaign to create public opinion about itself and the traditional American way of life with which it identifies itself. In doing so it has assumed that it can sell private enterprise to the American public just as it sells soap, cosmetics, electrical appliances, or automobiles. Corporate leaders talking to each other have said, "We have a continuous selling job to do," involving the merchandising of "certain simple facts." They believe that to get the best results they should follow, as they have put it, a "down-to-earth simple approach" in which they "take people by their mental hands" [9, p. 56] and lead them to the altar of free enterprise where they may find renewed faith in it. In this educational and spiritual campaign they are utilizing the usual media of mass communication—the radio, television, and the press—through which they try to shape attitudes, curb or create

[6] This point of view represents a significant contrast with Adam Smith's and suggests how far current thinking on economic matters has been affected by institutional arrangements. Smith said, "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. Nobody but a beggar chuses to depend chiefly upon the benevolence of his fellow-citizens" [26, p. 14].

prejudices, coin good will, and create habits of thought without the public's being aware that its ideas are being fabricated for it. Witness the recent wave of corporate institutional advertising designed to sell not products but the corporate executives' conception of the American way of life and the corporation's place in it. The United States Steel Corporation brings to vast television audiences not merely entertainment of high cultural value but a picture of itself and its numerous corporate subsidiaries as "the industrial family that serves the nation." And institutional advertising does not neglect the appeal to idealism. The American Petroleum Institute describes in eloquent language the role that the American oil industry is playing in "man's quest for freedom." As an "energizer of men's thoughts and a contributor to freedom" [5, p. 21], we are assured, it will continue to play an increasingly important role. General Electric, boasting that progress is its most important product, generously identifies its achievements with those of the electrical industry of which it is a part and with the growth and progress of a greater America, which it is privileged to serve [6, pp. 6-7].

In conducting this educational campaign, spokesmen for the corporations have used the customary mass-communication media but have not relied on them alone. They have resorted to subtler and more personal means for disseminating ideas: plant tours, special programs for clergymen, and summer conferences and seminars for college professors. To the latter they have invited scores of social scientists, some of whom they have regarded as holding a warped idea of the place of big business in the American economy, and they have entertained them with a lavish generosity to which few have been accustomed. In the language of the poet, some who came to scoff remained to pray.

In recent years the corporation's educational interests have broadened, and it has assumed increasing responsibility for the financial welfare of the American system of private higher education. To meet the plight of American colleges and to forestall federal assistance, with its threat to freedom of inquiry, the corporation is stepping into the breach created by higher costs and a decline in individual giving. The courts have upheld the legal right of a corporation to bestow on educational institutions its stockholders' money without their consent, and Congress has authorized the deduction of gifts of this nature from taxable income. In 1955 corporate giving to American colleges is estimated to have totaled $100,000,000, approximating from 7 to 8 cents out of every dollar spent by private schools [20, p. 12]. More important, three top-flight corporate executives were instrumental in the formation of the Council for Financial Aid to Education, for whose direction a distinguished scholar and former college president was selected. With gift-

hungry college presidents backing the movement and corporate executives not only recognizing, in the language of the *New York Times*, that "an increase in community-mindedness is a necessary consequence of the enormous growth in the size and power of corporations" but also identifying "the fate of the private liberal arts college with the fate of the private enterprise system" [20, p. 12], corporate giving is destined to grow both in size and in public favor.

Whither these institutional changes are leading us we do not know, and about them most economists have been little concerned. Nor have the other social scientists, who also have made peace with their environment, found them worthy of study. A noteworthy exception is Adolph Berle, who in his brilliant analysis, *The 20th Century Capitalist Revolution* [7], recognizes the modern corporation not merely as the agency in whose power rests the economic welfare of America, but as a social and political institution whose influence extends far beyond the market it serves. In the current atmosphere of ideological warfare the great corporation, Berle tells us, has undertaken, sometimes at the behest of the federal government, sometimes voluntarily, the responsibility for policing the nation's internal security system. Berle contends that in acting as a policeman the corporation can and sometimes does violate with impunity employees' constitutional rights by arbitrarily dismissing workers whose loyalty has become suspect. He believes that not only does the modern corporation have power over the lives of tens of thousands of workers, but—having in mind the operations of a dozen large oil companies both in international trade and in exploiting the oil resources of underdeveloped countries—that it exercises a power in international affairs like that of a soverign state.

I believe that in the task of analyzing the significance of the modern corporation to the American economy economists can play a larger role than they have thus far played. Without adequately investigating the causes of the merger movements that have restructured modern industry, they have assumed the inevitability of that structure. Because modern technology decrees large production units, they have assumed, without determining precisely the factors responsible for the growth of particular corporations, that giant managerial units are necessary and that their size is a reflection of their efficiency. Because corporations have identified the impressive material progress of the last two decades with the corporate system of control, some economists have assumed that the large corporation is responsible for this progress. Because corporations have spent millions for research in well-equipped laboratories out of which have come remarkable industrial innovations, some economists have assumed that individual researchers can contribute little to the advance of technology. These I believe are conclusions that have

come largely from superficial observation of the material circumstances that surround us. Instead they should be hypotheses to be tested.

There are other questions that are particularly appropriate for exploration by economists who study contemporary institutions. What is happening to the mobility of the factors of production as labor and capital become controlled by ever larger organizational units? What effect are corporate-financed social security programs and union rules governing seniority and other conditions of employment having on the mobility of labor? What effect is the corporation's interest in developing the well-rounded, loyal organization man, in preference to the nonconformist of distinction, having on the supply and mobility of managerial talent? What can we learn about prices from the recent tendency of corporations to finance expansion out of earnings without direct recourse to financial markets? What are the factors that explain the apparent anomaly of rising prices and declining production? Do the price and investment policies of big business on balance inhibit rather than promote the growth of output and investment? Do they result in a distribution of income incompatible with the fullest utilization of existing productive facilities? Finally, and most important, to what extent can the structure of industry be modified and the economy made more flexible without loss of efficiency? Can this be done through tax measures? Can it be done through more selective and vigorous administration of the antitrust laws? These are some of the questions with which students of industrial structure might well be concerned. They are becoming increasingly important to a free-enterprise economy in a world of competitive co-existence.

Oliver Wendell Holmes once remarked, "Every now and then a man's mind is stretched by a new idea . . . and never shrinks back to its former dimensions" [15, p. 266]. It is to be hoped that the minds of contemporary students of economic institutions that have now encompassed the corporate system may be sufficiently flexible to engender an inquiring attitude about what it means and where it is leading us.

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EFFECTS OF A DEVALUATION: A SIMPLIFIED SYNTHESIS OF ELASTICITIES AND ABSORPTION APPROACHES

By SIDNEY S. ALEXANDER*

The interwar and early postwar discussion of the effect of a change in the exchange rate on a country's foreign trade balance[1] concluded that it all depends on the four elasticities involved.[2] These are the elasticities of supply of exports and demand for imports, each pair being taken both for the devaluing country (country 1) and the rest of the world (country 2).

But a statement that something depends on one or more elasticities is merely a case of implicit theorizing unless the elasticities are independently specified [5]. The well-known formulas, along the lines of (1) below, that express the effects of a devaluation in terms of the elasticities, are purely definitional. They can be given operational content only by specifying the nature of the functions whose elasticities are involved. As shown in detail in the appendix, these formulas expressing the change in the trade balance in terms of the elasticities are derived by means of the following definitions and translations, together with the condition that the rate of exchange must equalize foreign and domestic prices:

(i) By defining the change in the foreign trade balance in terms of initial import and export quantities and prices, and changes therein.

(ii) By defining the elasticities in terms of the same variables.

(iii) By imposing the condition that the rate of exchange must equate foreign to domestic prices of internationally traded goods and services'

(iv) By using definitions (ii) and condition (iii) to translate any change in imports, exports, and their prices into an expression involving the elasticities and initial amounts only.

(v) By using the results of (iv) to translate (i) into an expression involving the elasticities and initial amounts only.

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[1] Throughout this essay capital movements are assumed absent except as passive settlements of the trade balance.

[2] See [9, pp. 225–32] for the history and outcome of this discussion.

The resulting formulas are:

$$(1)\quad \begin{aligned} &\text{(a)}\quad E_f = k\left[X_f\,\frac{e_{hxs}(e_{fxd}-1)}{e_{hxs}+e_{fxd}(1-k)} + M_f\,\frac{e_{hmd}(e_{fms}+1)}{e_{hmd}+e_{fms}(1-k)}\right] \\ &\text{(b)}\quad E_h = k\left[X_h\,\frac{e_{fxd}(e_{hxs}+1)}{e_{hxs}+e_{fxd}(1-k)} + M_h\,\frac{e_{fms}(e_{hmd}-1)}{e_{hmd}+e_{fms}(1-k)}\right]. \end{aligned}$$

The symbols have the following meanings:

E_h or E_f = change in the foreign trade balance between country 1 and country 2 when country 1 devaluates in the proportion k, measured in domestic or foreign currency (country 1's or country 2's) respectively. E_h or E_f is taken as positive when the foreign balance of country 1 improves, negative when it deteriorates.

X_h or X_f = predevaluation money value of exports of country 1 in domestic or foreign currency respectively.

M_h or M_f = predevaluation money value of imports of country 1 in domestic or foreign currency respectively.

k = the proportion by which country 1's currency is devalued, so that, if before the devaluation one unit of country 1's currency was worth r units of country 2's, after the devaluation it is worth $r(1-k)$ units of country 2's currency.

The e's are the four elasticities defined so as to be normally positive, as indicated in the appendix. The subscripts signify:

h—home or domestic (from point of view of country 1)
f—foreign (from point of view of country 1)
x—exports (from point of view of country 1)
m—imports (from point of view of country 1)
s—supply
d—demand

Note that if $X_f = M_f$ and if e_{hxs} and e_{fms} are infinitely large, and k is small, then:

$$E_f = rE_h = kM_f(e_{fxd} + e_{hmd} - 1)$$

This is the familiar formula that a condition of stability in the foreign exchanges is that the sum of the elasticities of demand be greater than unity.

Formulas (1), being merely definitional, can be applied to a wide variety of situations by specifying the appropriate functional relationships for the elasticities. Thus, suppose the elasticities refer to supply and demand functions with the national incomes and domestic prices held constant in both countries. Then (1) gives the effect of a devaluation on the foreign trade balance when national incomes and domestic

prices are held constant. But suppose that national incomes and domestic prices are permitted to vary, then (1) still holds provided that the elasticities are redefined to apply to the relationship of price and quantity changes when national incomes and domestic prices vary along with the prices of imports and exports as a result of a change in the exchange rate.

Intermediate cases are also possible. For example, domestic prices might be held fixed, but national incomes be permitted to vary, or vice versa. In order to give the elasticities any meaning in these cases, however, the mode of variation of the quantities that are neither held fixed nor explicitly involved in the elasticities must be specified.

In short, a realistic content is given to (1) only by the specification of the functional relationships to which the elasticities refer and also the functional relationships involving other quantities not specifically held fixed. One of the most meaningful specifications is that of holding money incomes fixed, so that the elasticities indicate the covariation of imports with their price, or exports with their price, in each country as a result of a change in the exchange rate when money incomes are held fixed.

After all, the purpose of formulas like (1) is to reduce the problem to a set of parameters that can be independently evaluated. If, for example, the elasticities were defined, not as the price-quantity relationships when incomes are held constant, but the price-quantity relationships when all other things vary as they would in the case of a devaluation, one would be completely at a loss as to the possible values of the elasticities unless one already had a complete analysis of the response of the economies of the two countries to a devaluation. The formulas would not tell us anything.

When the elasticities are defined as those that would hold when money incomes are held constant in both countries while the prices and quantities of exports and imports are permitted to vary as a result of a change in the exchange rate, (1) does tell us something, but it does not tell us the total or final effect of a devaluation. It gives only a partial or initial effect: that which would occur if incomes were actually held constant in both countries. But, in fact, incomes will usually change in both countries as a result of the devaluation, and these income changes will induce a whole train of price and quantity changes. It is possible to express these changes as a chain of elasticities, but that soon becomes, if not unmanageable, at least unintelligible to any but the most dogged reader [2] [12] [8, Vol. 2].

There is, however, an elegant technique for completing the analysis with formulas (1) without introducing income effects explicitly. That is to assume a monetary policy that makes the troublesome income effects

go away. For example, suppose that the devaluation is accompanied by a compensating monetary policy, so that the increased demand thrown on the domestic market is just canceled out by a corresponding deflationary monetary restriction. Aggregate money expenditures within the country for domestically produced goods and services for home consumption, investment, and exports would be held constant. Then the initial effects of the devaluation will be the ultimate effects and formulas (1) will tell the whole story.

Holding money incomes constant implies holding the domestic price level and aggregate volume of domestic production substantially constant. But it does not imply holding constant the prices or outputs of specific commodities. The prices of imports would almost certainly rise in the devaluing country. The prices and outputs of domestically produced goods and services which are close substitutes for imports would probably also rise. The prices and outputs of exports and of goods and services in close competition with exports for factors of production could also be expected to rise. But the prices or outputs of other domestically produced goods and services would correspondingly fall because of the restrictive monetary policy holding total expenditures constant. While it would be very difficult to estimate the numerical values of the appropriate elasticities, they are sufficiently clear conceptually for formulas (1) to be useful.

An approach similar to this is specifically adopted by Meade [8, Ch. 12] and the treatments of Metzler [9], Lerner [6], and others can be interpreted as implying it. It does represent an ideal line of policy: with one hand guide the money supply so as to maintain full employment without inflation, and with the other hand set the exchange rate for foreign balance. Any change in the exchange rate would then require a correlative change in the money supply. Unfortunately, things are not always done this way.

In any case, the effects of two operations are not the effects of one of them alone. It is still appropriate to ask what are the effects of a devaluation unaccompanied by a compensating monetary policy. That is the question under study here. Nurkse [10, p. 143] has pointed out the "pointlessness" of assigning internal effects to one aspect of monetary policy and external effects to another. It is the purpose of the present essay to indicate, in general terms, the nature of the modification of formulas (1) required when, the elasticities being defined with money incomes constant, there is no compensating monetary policy actually to keep money incomes constant. A formula will be derived to express the final effect of a devaluation on the trade balance after the effects of changing money incomes are taken into account.

The problem is, fundamentally, to find an expression for the result of

a sequence of reactions of each country to the devaluation itself and to the reactions of the other country. The first step is, accordingly, to show in Section I the formal structure of the adjustment to (1) that results from a sequence of such reactions, under certain simplifying assumptions. Then in Section II the economic content of the factors that enter into that formal structure is examined. Finally, in Section III, the simplifying assumptions are suspended and a generalized expression for the effects of the devaluation on the trade balance is derived.

I. *The Reversal Factors*

The domestic income changes and their effects on prices and production, assumed absent for the purposes of the definitions of the elasticities, will, when they actually occur, generally reduce the effects of the devaluation. That much we can expect in advance from the Le Chatelier principle that the effects of changing one parameter are greater when other parameters are held constant than when they are permitted to vary in accordance with the conditions of equilibrium [11, pp. 36–38].

More specifically, as we examine any of the possible repercussions in detail we will see that they can usually be expected to operate against the initial effects. Thus, any rise in real income of country 1 as a result of the devaluation's stimulating effect on domestic production is likely to lead to increased demand for imports tending to reduce the initial effect of the devaluation. Similarly, rises in prices of domestic products in country 1 as a result of increased expenditure out of increased money incomes will tend to cut down the price differentials initially set up by the devaluation and thus reverse in part the initial effects of the devaluation. Corresponding reactions in the opposite direction in country 2 will also tend to reverse in part the initial effects of the devaluation.

A. *The Formal Nature of the Reversal Factors*

We may accordingly define a pair of initial reversal factors, R_1 for country 1, and R_2 for country 2, such that (R_1-1) and (R_2-1) measure the ratio of the reversal, through the income reactions in the corresponding country, of the initial change in the foreign balance as given by (1). That is, if there is an initial improvement of E_f in the foreign balance of country 1 as a result of the devaluation, income reactions in country 1 will tend to reduce that improvement by $E_f(R_1-1)$ to R_1E_f. In general R_1 and R_2 will each be less than unity. When these two coefficients both operate, they set up a series of adjustments and readjustments to the initial effects that would lead in sequence from the initial effect E_f to R_1E_f, to $R_1R_2E_f$, to $R_1R_2E_f-(R_1-1)(R_1E_f-R_1R_2E_f)$ etc.

Suppose for example that E_h, the initial effect on the foreign balance in domestic currency before any readjustments through domestic income changes, is a one-unit improvement in the foreign-trade balance in domestic currency of country 1, the predevaluation balance being zero. Suppose also that each of the initial reversal factors R_1 and R_2 equals 1/2. The following sequence of adjusted values could then be expected. Country 1 would react by reducing the initial improvement in the foreign balance from 1 to 1/2 unit, country 2 would reduce it further to 1/4, country 1 would then reverse country 2's reduction by one-half, raising the improvement in the foreign balance at this stage to 3/8 unit, country 2 would then reverse the last change made by country 1 by one-half, leaving the change in the foreign balance up to this stage at 5/16, country 1 would then reverse country 2's last change by one-half leaving the foreign balance 11/32. The improvement in the foreign balance at subsequent stages of adjustment would then be 21/64, 43/128, 85/256, etc. converging toward 1/3.

As shown in the appendix, the following are the general formulas for the result of this type of sequence of adjustments and readjustments, provided the predevaluation balance was zero, and $-1<(R_1-1)(R_2-1)<1$:

$$(2)\qquad \text{(a)}\quad dB_f = \frac{R_1R_2E_f}{1-(R_1-1)(R_2-1)}$$

$$\text{(b)}\quad dB_h = \frac{R_1R_2E_h}{1-(R_1-1)(R_2-1)}$$

where dB_f and dB_h are the final changes in the trade balance measured in foreign and domestic prices respectively, and E_f and E_h are given by (1) subject to the condition that $X_f=M_f$, or, what amounts to the same thing, $X_h=M_h$.

The multiplier of the E's in (2),

$$\frac{R_1R_2}{1-(R_1-1)(R_2-1)},$$

may be called the final reversal factor, in contrast to R_1 and R_2, the initial reversal factors. The term R_1R_2 in the numerator of the final reversal factor expresses the first-stage operation of the initial reversal factors. The term

$$\frac{1}{1-(R_1-1)(R_2-1)}$$

reflects the sum of an infinite series of subsequent adjustments and readjustments to the initial reversals themselves.

B. *The Initial Reversal Factors*

Formulas (2) have been established in a purely formal fashion; if reversal factors operate as assumed, they lead to these formulas. Economic content can be put into them only by specifying the economic parameters upon which the reversal factors depend. This can be done very simply if it is assumed that the entire change in exports and imports is matched by the money value of corresponding changes in expenditure on domestic output.

Thus, suppose as a result of the changes in relative prices brought about by the devaluation, and in accord with (1b), the aggregate value of exports of country 1, measured in domestic currency, increases by $1, and the aggregate value of imports declines by $2. Then our assumption implies that the $1 increase in exports is a net additional demand for goods and services produced[3] in country 1, and the $2 reduction in expenditure on imports is switched to the domestic market, so that there will be a $3 increase in the aggregate demand for goods and services produced in country 1 before the secondary effects of increased incomes and the expenditures they induce are taken into account. Since the increased demand for exports will certainly constitute additional demand for goods in country 1, the principal content of this assumption is that the reduction of money demand for imports represents a shift of money demand from imports to domestic goods, and not from imports into hoarding.

Subsequently this assumption will be modified to take account of the possibility that not all of the initial change in the foreign balance goes to swell demand in the domestic market, but some hoarding (or dishoarding) out of a *given* money income may be induced by the initial change in relative prices resulting from the devaluation. But for the time being, let us assume that there is no change of hoarding induced as an initial effect of the devaluation, but only as a secondary effect through the change of money income.

Suppose that in country 1 a dollar of increased money income per income period leads, within that income period, to some money-income induced hoarding, h_1, and some money-income induced increased demand for imports or for export substitutes so as to deteriorate the foreign balance by f_1. We may refer to h_1 and f_1 as the money-income induced factors. Naturally these factors may have different values at different levels of economic activity, as will be considered below. The effects of an increase of money income on hoarding and on the foreign balance need not come only through an increase of real income, they

[3] Abstraction is made from the short-term possibilities of meeting such demand from inventories.

may result from money-income induced price changes, or distributional or taxation effects, or whatever.

Suffice it to say that a one-dollar increase in money income leads, in the corresponding income period, to an increment of hoarding, h_1, and to a deterioration of the foreign trade balance, f_1. The latter may operate either by increasing imports or by bidding back to domestic absorption products that would otherwise be exported. The remainder, $(1-h_1-f_1)$, will, in the next period, go into additional domestic absorption of goods and services and therefore into money income, leading to additional hoarding in the second period of $h_1\ (1-h_1-f_1)$ and a further deterioration of the foreign balance on the second round of $f_1(1-h_1-f_1)$. By the familiar multiplier analysis total money income in the country will ultimately have increased by $1/(h_1+f_1)$, and aggregate induced hoarding per dollar of original increment in expenditure, which we may denote by H_1, will be h_1 times the increase in money income, so that:

$$H_1 = \frac{h_1}{h_1 + f_1} \cdot$$

Similarly, the aggregate induced deterioration of the foreign balance, which we may denote by F_1, will be:

$$F_1 = \frac{f_1}{h_1 + f_1} \cdot$$

Note that $F_1+H_1=1$. This reflects the well-known proposition that an initial increase of expenditure of $1 will generate such aggregate additional money income as to induce leakages through hoarding or the foreign balance that just balance the initial expenditure.

Given the initial effect of the devaluation as measured in domestic currency, E_k, and the assumption that the entire change in the foreign trade balance becomes an increase of expenditure in country 1, money income in country 1 will go up (assuming for the moment no readjustment on the part of country 2) by $E_k/h_1+f_1)$, as indicated by multiplier theory. An increase of income of this amount will induce a deterioration of the foreign balance by

$$f_1\left(\frac{E_k}{h_1 + f_1}\right) = F_1 E_k.$$

This follows from the definition of f_1. Therefore the foreign balance after the first reaction of country 1 is $E_k-F_1E_k=E_k(1-F_1)=H_1E_k$. But by definition of R_1, this quantity equals R_1E_k. Therefore $R_1=H_1$, and $1-R_1=F_1$. Similarly, $R_2=H_2$.

Substituting $R_1=H_1$ and $1-R_1=F_1$ in (2):

$$(3)\qquad \begin{aligned} &(a)\quad dB_f = \frac{H_1H_2E_f}{1-F_1F_2} \\ &(b)\quad dB_h = \frac{H_1H_2E_h}{1-F_1F_2}. \end{aligned}$$

To recapitulate, formulas (3) depend on the following functional relationships and substantive assumptions, in addition to the definitions involved:

(i) The functional relationships underlying the conventional multiplier analysis which imply that an initial change in income in country 1 of E_h will lead to an ultimate change of $E_h/(h_1+f_1)$, with induced hoarding of H_1E_h and induced deterioration of foreign balance of F_1E_h, with $H_1+F_1=1$; and similarly for country 2.

(ii) The assumption that money expenditures and incomes in country 1 and country 2 will change initially by an amount equal to the initial change in the foreign balance.

(iii) The assumption of predevaluation balance.

Of these, (i) is fundamental and (ii) and (iii) are adopted for the purpose of simplification. The more complicated general case in which the simplifying assumptions (ii) and (iii) are suspended will be discussed in Section III. Before turning to those complications, it may be worth while further to simplify (3).

C. *The Reversal Factors Depend Only on the Ratios of the Money-Income Induced Factors.*

Further simplification is possible because equations (3) are homogeneous of zero degree in the h's and f's. If, for example, the underlying reactions of country 1 should change so that h_1 and f_1 increase in the same proportion, to ch_1 and cf_1 respectively, where c is any constant, dB_f and dB_h would be unchanged. In fact, the reversal factors depend only on the ratios of f_1 to h_1 and f_2 to h_2.

Let $v_1=f_1/h_1$, $v_2=f_2/h_2$. Then $H_1=1/(v_1+1)$, and $F_1=v_1/(v_1+1)$, and similarly for H_2 and F_2. Substituting these values in (3):

$$(4)\qquad \begin{aligned} &(a)\quad dB_f = \frac{E_f}{1+v_1+v_2} \\ &(b)\quad dB_h = \frac{E_h}{1+v_1+v_2}. \end{aligned}$$

If, for example, $h_1=f_1$ and $h_2=f_2$ then $dB_h=E_h/3$, the final effect of the devaluation will be one-third of the initial effect. If the f's are larger

than the h's, the initial effect will be reduced even more. Since, in many cases of devaluation, f_1 is large relative to h_1, the final effect of the devaluation may be a small fraction of the initial effect. This was recognized by Brems in the exclamation that "elasticity optimism does not imply devaluation optimism!" [2, p. 64] It was also the basis of my emphasis, in an earlier article, on the absorption effects [1], cf. [7]. Equations (3) are, essentially, a simplification and generalization of results first achieved by Harberger [3, esp. eq. 14].

Equations (4) permit the following generalization of the effect of a devaluation: The initial effect depends on the four elasticities, as expressed in (1). How much of the initial effect "sticks" depends on the relative strength in each of the two countries of the impact of additional money income on money hoarding on the one hand, and on imports and exports on the other. If, in one or both of the two countries, an additional unit of money income induces an increase of imports or reduction of exports that is large relative to additional money hoarding induced (so that at least one of the v's is large), the initial effects of the devaluation will tend to be canceled out by the domestic income consequences of the devaluation. If in both countries the hoarding effect of an increase in money income is strong relative to the foreign balance effects, so that the v's are small, there will be a correspondingly small reduction of the initial effect of the devaluation as indicated by the elasticities.

As limiting cases, if h_1 or h_2 is zero (and the corresponding f is not zero), $dB_f = dB_h = 0$. If f_1 and f_2 are zero (and the h's are not zero), $dB_f = E_f$ and $dB_h = E_h$. More generally the final reversal coefficient depends on the ratios of the f's to h's.

II. *The Economic Nature of the Money-Income Induced Factors*

The nature of h and f can best be analyzed by the separation of the effects of an increase in money income into real income effects and price effects. In order to show these separately we will first assume extensive unemployed resources in the country under consideration, so that an additional dollar of expenditure goes entirely to increase production and therefore real income but does not raise prices. Second, it will be assumed that just the opposite is true, that an increased dollar of expenditure only raises prices but does not increase production or real income. Then the two effects will be combined into a single expression.

If an additional dollar of expenditure goes entirely into stimulating increased production and real income and does not raise prices at all or bid goods away from exports, the interpretation of h and f is quite straightforward. For, in this case, f is nothing other than the familiar real propensity to import, the amount of increase in import demand that will be brought about by a \$1 increase in real income.

Correspondingly, h is, in this case, the real propensity to hoard, defined as $1-a$, where a is the real absorption—real consumption plus real investment—induced by a \$1 increase in real income. Note that the absorption includes not only the induced consumption but any investment that is induced by the \$1 increase in production and real income.[4] The additional dollar of money income is exhaustively divided into three parts: one part, d, goes to purchase additional domestic goods; one part, f, goes to deteriorate the foreign balance through increased imports; and one part, h, goes into money hoards. These familiar concepts hardly require further analysis.

If, on the contrary, a dollar of additional expenditure goes only into raising prices but does not increase production or real income, the nature of h and f is more complicated. The formal aspects of the situation are unchanged. It will still be true that the \$1 increase in money income can be distributed into three components d, f, and h, such that $d+f+h=1$. But it may be presumed that the coefficients d, f, and h will have values for an increase of money income accompanied by a proportional domestic price rise different from the values of these coefficients when pieces of domestically produced goods and services are constant.

In particular, it may be presumed that the v's, the ratios of the f's to the h's, will be substantially different in the two cases. The v's are likely to be much greater under full employment (constant real income) than in conditions of extensive unemployment (constant prices). This conclusion follows from the probability of both a larger f and a smaller h. It is probable that f will be larger at full employment because the full utilization of domestic resources will tend to produce such price reactions as to shunt increases of demand to imports or to goods that would otherwise be exported, or to domestic goods which bid resources away from the production of exports.

We can expect h to be smaller under conditions of full employment because it will then, to a first approximation, be nearly equal to the average propensity to hoard, while in the unemployment case it is equal to the marginal propensity to hoard. That is, if real hoarding should depend only on the level of real income, an increase of money income and prices that leaves real income unchanged would merely increase money hoarding in proportion to the increase of prices. If, initially, hoarding is zero, it will still be zero after the price rise. On the other hand, each dollar of increase of real income could be expected to increase hoarding by the marginal propensity to hoard, $1-a$ in the terminology of the previous case. And, on the assumption of an initial

[4] The propensity to absorb, a, could be divided into two components, d and m, referring to absorption of domestic goods and imports respectively. Then m woud, in this case of no effect of the rise of domestic demand on exports, equal f.

foreign balance near zero, the average propensity to hoard is also near zero, which follows from the identity of hoarding with the foreign balance.[5] Therefore, in the absence of cash-balance effects, we should expect h to be close to zero at full employment, possibly negative.

At full employment, and with initial hoarding negative, as it is likely to be in a devaluing country, the principal possibility of an h greater than zero is due to the cash-balance effect. With a given stock of money in the country, the rise of prices will change the relation of money incomes to money stocks and may lead to some attempt to build up money stocks so that money hoarding at any given level of real income may be increased. With less than full employment h would be made up of both the marginal propensity to hoard and the cash-balance effect, while at full employment, h would reflect the cash-balance effect principally.

If increased money hoarding is not forthcoming either from the cash-balance effect or from some other effect, the devaluation will bring no improvement of the foreign balance from an initially balanced position. For the net improvement in the foreign balance measured in domestic currency must equal the net increase in hoarding [3] [1] [7]. The exact nature of h, when $h \neq 0$ at full employment, and why a higher price level should lead to more hoarding in money terms even if we start from an initial position of zero hoarding, are primarily questions of national monetary theory. For the purposes of international monetary theory it suffices to say that when a devaluing country is at full employment the principal hope of a devaluation's "sticking" (unaccompanied by a compensating monetary policy) is wrapped up in the cash-balance effect, or any similar effect leading to increased money hoarding at given real income as prices rise.

In the general case, a dollar increase of expenditure, and therefore money income, in country 1 can be broken down into two components. The first, w_{1_y}, is the increase in real income, the second, w_{1_p}, is the increase of money income in excess of real income, an increase that goes into raising prices. Note that $w_{1_y}+w_{1_p}=1$. Each component will have its own h and f. Suppose a \$1 increase in real income of country 1 induces incremental hoarding of h_{1_y} and a deterioration of the foreign balance of f_{1_y}, and a \$1 increase in money income that goes solely into raising prices induces incremental hoarding of h_{1_p} and a deterioration of the foreign balance of f_{1_p}. Then a \$1 increase of money income, of which w_{1_y} goes into an increase of real income and $w_{1_p}=1-w_{1_y}$ goes into raising prices, will have an h_1 and an f_1 given by:

$$h_1 = h_{1_y}w_{1_y} + h_{1_p}w_{1_p} \quad \text{and} \quad f_1 = f_{1_y}w_{1_y} + f_{1_p}w_{1_p}.$$

[5] First used, to my knowledge, as a fundamental element in this type of analysis, in [3, p. 52], further elaborated in [1], [7], [12].

In short, we may break h_1 and f_1 into components reflecting the real-income effects and the price effects and their respective weights. The weights depend on how, under the circumstances existing at the time of the devaluation, an additional dollar of expenditure will be divided between increasing production and raising prices.

This completes the main structure of the analysis. Instead of saying, as does the literature up to 1950, that the effect of a devaluation on the foreign-trade balance depends on the four elasticities, we must now say that it depends on these four elasticities subject to the income-induced readjustments in the countries concerned—readjustments which will tend to reverse the effects of the elasticities. These readjustments in turn depend on the relative strength of factors inducing hoarding and those inducing deterioration of the foreign balance in response to increased levels of money expenditures, as reflected in the h's and f's respectively. The h's and f's will have different values depending on the levels of domestic resource employment and the institutional circumstances which govern the extent to which an increase of expenditure will go either into increasing real incomes or raising prices.

III. *Some Simplifying Assumptions Modified*

The simplicity of equations (4) has been purchased by some oversimplifications which may now be eliminated at the expense of greater complexity. The principal oversimplifications are the initial assumptions (ii) and (iii) above (p. 30). We may remove these assumptions one at a time.

A. *The Case of Predevaluation Imbalance*

If the predevaluation trade balance is not equal to zero, additional complications enter from the fact that the change in the balance measured in one currency will not be equal to the change of the balance measured in the other currency converted by the postdevaluation rate of exchange [4]. But the foreign balance itself in one currency always equals that in the other currency converted at the going rate of exchange; so that—

(5) (a) $B_{fo} = rB_{ho}$

(b) $B_{fa} = r_a B_{ha}$

where B_{fo}, B_{fa} are the balances in foreign currency before and after devaluation respectively, B_{ho}, B_{ha} are the corresponding balances in domestic currency, and r and $r_a = r(1-k)$ are the pre- and postdevaluation rates of exchange respectively.

Subtracting (5a) from (5b):

(5c) $$\Delta B_f = r\Delta B_h - rkB_{ha}$$

where

$$\Delta B_f = B_{f_a} - B_{f_o} \quad \text{and} \quad \Delta B_h = B_{h_a} - B_{h_o}$$

Since $r = r_a + kr$, ΔB_f may be expressed in terms of r_a, ΔB_h, k and B_{f_o}; and ΔB_h in terms of r_a, ΔB_f, k and B_{h_o}:

(6)

$$\text{(a)} \quad \Delta B_f = r_a \Delta B_h - rkB_{h_o} = r_a \Delta B_h - kB_{f_o}$$

$$\text{(b)} \quad \Delta B_h = \frac{\Delta B_f}{r_a} + \frac{k}{1-k} B_{h_o}$$

Thus the change in the balance in one currency will not equal the change in the balance in the other currency multiplied by the post-devaluation rate of exchange, but will differ by a factor which is essentially the devaluation proportion multiplied by the initial balance in the appropriate currency. That is, k is the devaluation proportion when the rate of exchange is expressed in number of units of foreign currency for one unit of domestic currency while $k/1-k$ is the devaluation proportion when the rate of exchange is expressed the other way around. The quantity kB_{f_o}, the difference between ΔB_f and $r_a \Delta B_h$, may be called the scale-down effect [4].

The scale-down effect is most easily interpreted on the assumption that $\Delta B_h = 0$. Then, even though the foreign balance is unchanged in domestic currency, it will be reduced in foreign currency by the amount $-kB_{f_o}$. Suppose the predevaluation foreign balance, B_{h_o}, is a deficit of $-\$1$, measured in domestic currency, the predevaluation balance in foreign currency, B_{f_o}, would then be $-r$. If the postdevaluation foreign balance measured in domestic currency, B_{h_a}, is unchanged at $-\$1$, so that $\Delta B_h = 0$, the postdevaluation balance in foreign currency, B_{f_a}, will be $-r(1-k)$, and ΔB_f will be the positive quantity kr. This reflects nothing more than the fact that the devaluation scales down the foreign currency equivalent of any given amount of domestic currency by the devaluation proportion.

Similarly if $\Delta B_f = 0$, then

$$\Delta B_h = \frac{k}{1-k} B_{h_o},$$

which may be referred to as the scale-up effect. It reflects the extent to which the devaluation would scale up the foreign balance in domestic currency if the foreign balance in foreign currency remained unchanged.

The fact that $\Delta B_f \neq r_a \Delta B_h$ if $B_{f_o} \neq 0$ means that in the adjustment process previously considered, the two countries will be adjusting to different quantities if the initial trade balance is not equal to zero. Let us denote the scale-down and scale-up effects as D_f and D_h respectively,

$$\text{i.e., } D_f = -kB_{f_o}; \text{ and } D_h = \frac{k}{1-k} B_{h_o};$$

so that $D_h = -D_f/r_a$. If the predevaluation balance was a deficit $(B_{fo}, B_{ho} < 0)$ then D_f will be positive and D_h will be negative.

It is shown in the appendix that the final change in the balance, after the full sequence of adjustments and readjustments, starting from an initial imbalance, will be:

$$(7) \quad \begin{aligned} &(a) \quad dB_f = \frac{E_f + v_1 D_f}{1 + v_1 + v_2} \\ &(b) \quad dB_h = \frac{E_h + v_2 D_h}{1 + v_1 + v_2}. \end{aligned}$$

If, for example, $E_h = 0$, then $E_f = D_f$, and

$$dB_f = D_f\left(\frac{1 + v_1}{1 + v_1 + v_2}\right),$$

and

$$dB_h = D_h\left(\frac{v_2}{1 + v_1 + v_2}\right).$$

Thus, if the predevaluation foreign trade balance is not equal to zero, the final expression for an effect of a devaluation includes the scaling effects reduced by the final reversal factor, but also subject to an additional adjustment, v_1 or v_2, which may be either greater or less than unity.

B. *If the Entire Change in the Foreign Trade Balance is not Shifted to Domestic Expenditure*

Now let us suspend the assumption that the entire amount of the initial improvement in the foreign balance in domestic currency, E_h, is thrown on the domestic market as net additional expenditure in country 1. Assume instead that there is some direct effect, positive or negative, of the relative price changes initially brought about by the devaluation on the money amount of absorption forthcoming at a given money income. This direct effect of the devaluation on hoarding out of a given money income in country 1 may be denoted by d_1. The total initial effect on expenditure in country 1 will thus be the initial effect on the trade balance, E_h, minus d_1.

This will lead to a net change of $d_1/h_1 + f_1$ in aggregate money income in country 1 from that previously considered, and a further change of $F_1 d_1$ in the foreign balance at a given rate of exchange, measured in domestic currency. This further change will, however, be scaled down

by country 2 to $H_2F_1d_1$ and then adjusted back and forth in the now familiar process to $H_2F_1d_1/1-F_1F_2$, or in terms of the v's, to

$$\frac{v_1d_1}{1+v_1+v_2}$$

in domestic currency. The net change in the foreign balance in foreign currency associated with d_1 is therefore

$$\frac{v_1d_1r_e}{1+v_1+v_2}.$$

Similarly, if in country 2 there is a direct effect, d_2, of the devaluation on hoarding out of a given income, the resulting change in the foreign balance in foreign currency will be

$$\frac{H_1F_2d_2}{1-F_1F_2} \quad \text{or} \quad \frac{v_2d_2}{1+v_1+v_2}.$$

In domestic currency of country 1 the corresponding amount is

$$\frac{v_2d_2/r_e}{1+v_1+v_2}.$$

The final generalized expressions for the effects of a devaluation on the trade balance are therefore:

$$(8) \quad \begin{aligned} &\text{(a)} \quad dB_f = \frac{E_f + v_2d_2 + v_1(D_f + d_1r_e)}{1+v_1+v_2} \\ &\text{(b)} \quad dB_h = \frac{E_h + v_1d_1 + v_2(D_h + d_2/r_e)}{1+v_1+v_2}. \end{aligned}$$

APPENDIX

A. *Derivation of Formulas Expressing Change of the Foreign Trade Balance in Terms of Elasticities*

Definition of terms not previously defined:[4]

Let p_h, q_h, Δp_h, Δq_h denote the predevaluation prices in domestic currency of imports and exports of country 1, and the changes therein associated with the devaluation under any specified assumptions.

Let p_f, q_f, Δp_f, Δq_f denote the corresponding prices and price changes expressed in foreign currency.

Let x, m, Δx, Δm denote the physical volumes of exports and imports of country 1 and changes therein associated with the devaluation under any specified assumptions.

[4] See pp. 23 and 34 for definitions of symbols previously defined.

The derivation follows the outline in the text above (p. 22). It will be given only for E_f, since that for E_h follows similar lines.

1. *Definition of the change in the trade balance.*

$$B_{f_0} \equiv xq_f - mp_f.$$

Ignoring second-order terms such as $\Delta x \Delta q_f$:

$$\text{(A1)} \qquad E_f \equiv \Delta B_f = (q_f \Delta x + x \Delta q_f) - (p_f \Delta m + m \Delta p_f)$$
$$= X_f\left(\frac{\Delta x}{x} + \frac{\Delta q_f}{q_f}\right) + M_f\left(-\frac{\Delta m}{m} - \frac{\Delta p_f}{p_f}\right).$$

2. *Definition of the elasticities.*
Elasticity of:

(A2)

Home export supply . . . . $e_{hxs} \equiv \dfrac{\Delta x}{x} \Big/ \dfrac{\Delta q_h}{q_h}$

Foreign export demand . . . . $e_{fxd} \equiv -\dfrac{\Delta x}{x} \Big/ \dfrac{\Delta q_f}{q_f}$

Foreign import supply . . . . $e_{fms} \equiv \dfrac{\Delta m}{m} \Big/ \dfrac{\Delta p_f}{p_f}$

Home import demand . . . . $e_{hmd} \equiv -\dfrac{\Delta m}{m} \Big/ \dfrac{\Delta p_h}{p_h}.$

These elasticities refer to the particular assumptions to which the Δ terms correspond.

3. *Price equalization through the exchange rate.*

Price equalization implies $\quad p_f = p_h r$

and, $\quad p_f + \Delta p_f = (p_h + \Delta p_h)r(1 - k).$

Therefore, $\quad \Delta p_f = (p_h + \Delta p_h)r(1 - k) - p_h r.$

Dividing by p_f on the left and $p_h r$ on the right,

(A3)

$$\text{(a)} \quad \frac{\Delta p_f}{p_f} = -k + \frac{\Delta p_h}{p_h}(1 - k), \quad \text{and similarly:}$$

$$\text{(b)} \quad \frac{\Delta q_f}{q_f} = -k + \frac{\Delta q_h}{q_h}(1 - k).$$

4. *Translation of price and quantity changes into elasticities and k.*
By combining (A2) and (A3), the relative changes in exports, imports, and their prices can be expressed in terms of the elasticities and the devaluation proportion, k.

$$\text{(A4)}\qquad \begin{aligned} \frac{\Delta x}{x} &= \frac{ke_{hxs}e_{fxd}}{e_{hxs} + e_{fxd}(1-k)} & \qquad \frac{\Delta q_f}{q_f} &= -\frac{ke_{hxs}}{e_{hxs} + e_{fxd}(1-k)} \\ \frac{\Delta m}{m} &= -\frac{ke_{fms}e_{hmd}}{e_{hmd} + e_{fms}(1-k)} & \qquad \frac{\Delta p_f}{p_f} &= -\frac{ke_{hmd}}{e_{hmd} + e_{fms}(1-k)}. \end{aligned}$$

5. *Translation of foreign balance into terms of elasticities.*

Substituting (A4) into (A1) yields formula (1a) above (p. 23). Formula (1b) can be derived in a similar manner.

B. *Proof of Final Reversal Formulas*

1. *Assuming predevaluation balance.*

Given a series of adjustments by countries 1 and 2 such that Δ_{ji} is the change made by the jth country at stage i, and for the second and all successive stages:

$$\text{(B1)}\qquad \begin{aligned} &\text{(a)}\quad \Delta_{1i} = (R_1 - 1)\Delta_{2(i-1)}/r_a \qquad & i > 1 \\ &\text{(b)}\quad \Delta_{2i} = (R_2 - 1)\Delta_{1i}\cdot r_a \qquad & i > 1 \end{aligned}$$

where the Δ_{1i} are measured in domestic, and the Δ_{2i} in foreign, currency.

These formulas apply only to the second and successive stages, but not to the first, because at the first stage country 1 will adjust, not to the change made by country 2 but to the change brought about by the devaluation, so that $\Delta_{11} = (R_1 - 1)E_h$. Similarly, $\Delta_{21} = (R_2 - 1)(E_f + \Delta_{11}\cdot r_a)$. The assumption that country 1 adjusts first is purely arbitrary. The final expressions would be unchanged if it were assumed that country 2 adjusts first.

Let

$$\Delta_1 = \sum_{i=1}^{\infty} \Delta_{1i} \quad \text{and} \quad \Delta_2 = \sum_{i=1}^{\infty} \Delta_{2i}.$$

These sums will be finite provided, as will be assumed, that $-1 < (R_1 - 1)\cdot(R_2 - 1) < 1$.

Then the final change in the foreign balance measured in the respective currencies, dB_h and dB_f, starting out from initial changes E_h and E_f, will be the sum of the initial changes plus the subsequent adjustments:

$$\text{(B2)}\qquad \begin{aligned} &\text{(a)}\quad dB_h = E_h + \Delta_1 + \Delta_2/r_a \\ &\text{(b)}\quad dB_f = E_f + \Delta_1 r_a + \Delta_2. \end{aligned}$$

Δ_1, the sum of all adjustments made by country 1, will be the adjustment in response to the initial change E_h plus the sum of the adjustments in response to the adjustments of country 2, which in the aggregate are Δ_2/r_a, measured in domestic currency:

$$\text{(B3)}\qquad \begin{aligned} &\text{(a)}\quad \Delta_1 = (R_1 - 1)(E_h + \Delta_2/r_a), \quad \text{and similarly:} \\ &\text{(b)}\quad \Delta_2 = (R_2 - 1)(E_f + \Delta_1\cdot r_a). \end{aligned}$$

Substituting (B3b) in (B3a), and (B3a) in (B3b) and defining

$$g \equiv (R_1 - 1)(R_2 - 1):$$

(B4)

$$\text{(a)}\quad \Delta_1 = (R_1 - 1)E_h + g\frac{E_f}{r_a} + g\Delta_1$$

$$\text{(b)}\quad \Delta_2 = (R_2 - 1)E_f + gE_h r_a + g\Delta_2;$$

or, transposing the final term and dividing by $1-g$, which by previous assumption cannot be zero:

(B5)

$$\text{(a)}\quad \Delta_1 = \frac{1}{1-g}\left[(R_1 - 1)E_h + g\frac{E_f}{r_a}\right]$$

$$\text{(b)}\quad \Delta_2 = \frac{1}{1-g}\left[(R_2 - 1)E_f + gE_h r_a\right].$$

If the predevaluation balance was zero, $E_h = E_f/r_a$, so:

(B6)

$$\text{(a)}\quad \Delta_1 = \frac{1}{1-g}(R_1 - 1 + g)E_h$$

$$\text{(b)}\quad \Delta_2 = \frac{1}{1-g}(R_2 - 1 + g)E_h r_a.$$

Substituting (B6) in (B2a):

(B7)

$$dB_h = E_h\left[1 + \frac{1}{1-g}(R_1 + R_2 - 2 + 2g)\right]$$

$$= E_h\left[\frac{1}{1-g}(R_1 + R_2 - 1 + g)\right].$$

Since, from the definition of g, $R_1+R_2-1+g=R_1R_2$, and $1-g=1-(R_1-1)\cdot(R_2-1)$:

(B8)

$$\text{(a)}\quad dB_h = \frac{R_1R_2E_h}{1-(R_1-1)(R_2-1)},\quad \text{and similarly:}$$

$$\text{(b)}\quad dB_f = \frac{R_1R_2E_f}{1-(R_1-1)(R_2-1)}.$$

2. *The general case.*

Allowing for direct hoarding effects d_1 and d_2, (B3) and (B4) must be modified as follows:

(B3′)

$$\text{(a)}\quad \Delta_1 = (R_1 - 1)(E_h - d_1 + \Delta_2/r_a)$$

$$\text{(b)}\quad \Delta_2 = (R_2 - 1)(E_f - d_2 + \Delta_1\cdot r_a).$$

Then (B4) becomes:

(B4′)
(a) $\Delta_1 = (R_1 - 1)(E_h - d_1) + g/r_a(E_f - d_2) + g\Delta_1$
(b) $\Delta_2 = (R_2 - 1)(E_f - d_2) + gr_a(E_h - d_1) + g\Delta_2.$

Dropping the assumption that the predevaluation balance was zero, $E_h = (E_f/r_a) + D_h$ and $E_f = E_h r_a + D_f$. Also, $D_h = -D_f/r_a$. By operations similar to those used in obtaining (B5) and (B6):

(B6′)

$$\text{(a)} \quad \Delta_1 = \frac{1}{1-g}\left[R_1(E_h - d_1) + d_1 - g\left(D_h + \frac{d_2}{r_a}\right)\right] - E_h$$

$$\text{(b)} \quad \Delta_2/r_a = \frac{1}{1-g}\left[R_2\left(E_h - D_h - \frac{d_2}{r_a}\right) + \frac{d_2}{r_a} + D_h - gd_1\right] - E_h.$$

Substituting (B6′) in (B2a):

(B7′)
$$dB_h = \frac{1}{1-g}\left[E_h(g - 1 + R_1 + R_2) - d_1(g + R_1 - 1) - \left(D_h + \frac{d_2}{r_a}\right)(g + R_2 - 1)\right].$$

Let

$$v_1 = \frac{1 - R_1}{R_1}, \qquad v_2 = \frac{1 - R_2}{R_2}.$$

Then:

$$\frac{g - 1 + R_1 + R_2}{1 - g} = \frac{1}{1 + v_1 + v_2}, \qquad \frac{g + R_1 - 1}{1 - g} = \frac{-v_1}{1 + v_1 + v_2},$$

$$\frac{g + R_2 - 1}{1 - g} = \frac{-v_2}{1 + v_1 + v_2}.$$

Substituting these values in (B7′)

(B8′)

$$\text{(a)} \quad dB_h = \frac{E_h + v_1 d_1 + v_2(D_h + d_2/r_a)}{1 + v_1 + v_2}, \quad \text{and similarly,}$$

$$\text{(b)} \quad dB_f = \frac{E_f + v_2 d_2 + v_1(D_f + d_1 r_a)}{1 + v_1 + v_2}.$$

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A COMPARISON OF THE DISTRIBUTION OF PERSONAL INCOME AND WEALTH IN THE UNITED STATES AND GREAT BRITAIN

By HAROLD LYDALL AND JOHN B. LANSING*

Comparisons, though sometimes odious, are nearly always illuminating. The possibilities for making comparisons between the United States and Great Britain have been extended in recent years by the development in both countries of sample surveys of consumers, particularly the Savings Surveys in Great Britain and the Surveys of Consumer Finances in the United States.[1] The substance of this paper will be devoted to two main topics: first, the level of income and its distribution amongst households in the two countries; and secondly, the ownership of capital by households, its distribution, and the types of assets held.

I. *The Distribution of Income*

The main emphasis in the following discussion will be on the distribution of money income before income tax, but an attempt will also be made to compare the distributions of income after income tax. Comparisons of these distributions are intended to supplement comparisons already available from the national accounts of total income and average income per capita. There is also an extensive literature on the distribution of income for each country considered separately, e.g., [1] [8]. The survey data have two great advantages, however: The meth-

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[1] In Great Britain Savings Surveys were initiated by the Oxford University Institute of Statistics and carried out, with the help of grants from the Nuffield Foundation, for three years in succession, 1952-54. The survey was continued in 1955 by the government but it has been in abeyance for the past three years. The methodology used is broadly similar to that in the Surveys of Consumer Finances in the United States. Most of the data reported here has been drawn from those two surveys. Reports on the results of the Surveys of Consumer Finances are published annually in the *Federal Reserve Bulletin* and reports on the British Savings Surveys have appeared in the *Bulletin* of the Oxford Institute of Statistics and in Lydall [7].

ods used in the British and American surveys are similar, and the data are in such a form that they can be reorganized in a flexible manner to prepare comparable tabulations.

The ratio of real incomes per capita for the United States and Great Britain can be approximated from the national accounts, but the exact ratio is impossible to calculate, since patterns of output and expenditure, and effective prices and qualities of individual goods differ between the two countries. In one very careful comparison of the United States and the United Kingdom for the year 1950 it was estimated that, in American prices, per capita gross national product (at market prices) was 1.6 times as high in the United States as in the United Kingdom, while in British prices the same ratio was a little over 2 [2, Table 27]. The ratio of per capita consumption in the two countries, on similar calculations, lay between 1.5 and 2.[2]

Measured in local currency the per capita gross national product of the United States in 1953 (at market prices) was nearly $2,300 and of the United Kingdom about £330. This means that the American economy produced for each American (man, woman and child) nearly $7 for every £1 available for each inhabitant of the United Kingdom. A similar relation obtained also between per capita personal income before tax in the two countries.

Since they are designed for purposes of economic analysis, the surveys work with income per household rather than income per head. In the year 1953 the average total money income of American spending units, as estimated by the Survey of Consumer Finances, was $4,570; in Britain the survey estimate for the year 1953-54 was £477. This represents a ratio of $9.6 to every £1. In comparing this ratio to the ratio of $7 to £1 from the national accounts allowance must be made for a difference in the average number of persons per unit, which is 2.9 in the United States against 2.25 in Britain. If per capita incomes were equal, the larger American units would receive larger incomes in the ratio of 2.9 to 2.25. Thus, the expected ratio of mean income per spend-

[2] The relative purchasing power of the pound and the dollar varies widely for different goods and services. In general, those goods whose production is capital-intensive are cheap in terms of dollars while labor-intensive goods and all services are dear. A shopper in America who takes $4 to £1 as his standard of comparison will find that cars, television sets, washing machines and the like are much cheaper than in England; clothes are about the same or a little cheaper; and food varies according to type, with meat and highly processed foods being generally cheaper, while fruit and vegetables are often more expensive. The extreme example of a costly American service is the man's haircut. There is local variation in both countries, but the purchasing power parity ratio in this case appears to vary between $10 and $15 to £1. All personal services are expensive in America since the American wage or salary earner gets about $8 for each £1 paid to his British counterpart. Indeed, on an hourly basis he gets more. Hence, such services as education, medical attention, hotel accommodation and public catering are generally relatively expensive in America and cheap in England.

ing unit based on data from the national accounts adjusted for size of unit is not $7 per £1 but $9 per £1. It is reassuring to find that this ratio closely approximates that of $9.6 per £1 obtained directly from the surveys.

The difference may be partly attributable to differences in coverage —the surveys do not cover institutions and other quasihouseholds—or in the definition of income—the British survey includes certain income in kind which is not included in the American survey.[3] It is interesting to note, however, that the median survey incomes for the two countries were $3,780 and £420 respectively; and these stand in the ratio of exactly $9 to £1. In the comparisons of distributions of spending-unit income which will be made below we shall frequently work on the assumption that $9 of spending-unit income in America is equivalent to £1 of spending unit income in Britain.[4]

There are various ways in which distributions of income in two different countries, or at different times in the same country, can be compared. A convenient method for our purpose is to rank the sample of spending units in each country in order of total income and then to divide them into tenths. The position of the deciles in relation to one another will provide a basis for comparing the shapes and degrees of dispersion of the two income distributions. Table 1 shows the pretax income deciles of British and American spending units derived from the 1954 surveys. In order to compare the relative positions of the decile points in the two countries ratios between pairs of deciles are shown in column 3.

As already noted, the ratio of the fifth decile (or median) in the United States to the fifth decile in Great Britain is exactly $9 to £1. And, in fact, six out of nine ratios are either 8.9 or 9.0. This means that for about two-thirds of the way—from around 30 per cent from the top of the distribution to 10 per cent from the bottom—the two distributions are almost identical in shape. But both at the top and at the

[3] There are two items: income in kind of farmers, and the imputed value of owner-occupied houses.

[4] The ratio of spending-unit income is not identical with the ratio of income per earner, since American spending units contain more earners on the average than British spending units. This is mainly because more American spending units are married couples. A rough estimate of the ratio of income per earner can be obtained by dividing the aggregate of "earned income" in each country by the number of occupied persons. On the basis of such a computation it appears that the ratio of wage and salary income per employee (both full and part-time) in nonagricultural employment in 1953 was $8.5 to £1. If an individual in Britain wishes to compare his income with the income received by a person doing a similar job in the United States he may convert his annual income in pounds at this "rate of exchange" (or at a slightly lower rate for more recent years). If he finds an appreciable difference between the figure arrived at in this way and the dollar income of his "opposite number" he can conclude that the two jobs occupy different positions in the two income scales.

bottom there are deviations, with the ratios rising above 9.0 at the top and falling at the bottom decile to less than 8.0. The implication of these deviations is that American incomes are more widely dispersed than British incomes at each end of the distribution, or in other words, the distribution of income is more unequal in the United States than in Great Britain.

Since some part of the difference between the two distributions might be attributable to the difference in the size of the population units measured in the two countries a comparison was made of the ratios of deciles of family income in America to household income in Britain. The "family" in the American surveys consists of all related persons living in the same dwelling; and distributions of family income are compiled for each American survey. The "household" in Britain is slightly wider than the family and normally includes all persons, whether related or not, who share common housekeeping arrangements. Household income in Britain was compiled only in the 1952 survey, but on that occasion it was defined so as to exclude unrelated boarders. Hence for the 1952 surveys it is possible to make a comparison between the distributions of family and household income in the two countries on a very similar basis.[5] The results of this comparison are shown in the right-hand portion of Table 1.

TABLE 1.—DISTRIBUTION BY DECILES, INCOME BEFORE TAX, UNITED STATES AND GREAT BRITAIN

Deciles	Spending Unit Income Before Tax, 1954 Surveys			Family or Household Income Before Tax, 1952 Surveys		
	United States (dollars)	Great Britain (pounds)	Ratio of US to GB	United States Families (dollars)	Great Britain Households (pounds)	Ratio of US to GB
Top	7,680	810	9.5	7,590	980	7.7
Second	6,000	650	9.2	5,760	720	8.0
Third	5,000	560	8.9	4,850	600	8.1
Fourth	4,400	490	9.0	4,180	520	8.0
Fifth	3,780	420	9.0	3,530	460	7.7
Sixth	3,150	355	8.9	3,000	410	7.3
Seventh	2,500	280	8.9	2,450	350	7.0
Eighth	1,800	200	9.0	1,700	280	6.1
Ninth	1,000	130	7.7	940	170	5.5

The effect of changing from a spending-unit basis to a family (or household) basis is to make the distributions from the two countries

[5] The only difference is that a few of the British households contain indoor domestic servants and friends living with the family. The average number of persons per American family in 1952 was 3.23, and the average number of persons per British household 3.06.

conform much more closely in the region above the median but to deviate more obviously below this level. In other words, this comparison makes it less clear that the American distribution of income is more widely dispersed at the top of the income scale; but it reinforces the view that there is a significant difference between the British and American distributions at the bottom.[8]

A further difference between the two countries is in the nature of their tax laws. For some purposes it may be more appropriate to compare the distribution after taxes than the distribution before taxes. No attempt has been made to estimate the incidence of all taxes, but in both countries the survey staff did prepare an estimate of the liability of each spending unit for the national income tax. In Britain this estimate also included the liability for social security contributions. The inclusion of this item makes the British system of income taxation appear less sharply progressive than it is in fact. Even apart from this difficulty these estimates are subject to error. The investigators ranked the spending units by income before income tax and estimated the share of total income going to the top tenth, the second tenth, and so forth. The results are shown in the first two columns of Table 2. The units were then re-ordered by income after taxes, and the shares of income after taxes accruing to each tenth are shown in the last two columns of Table 2. In studying the data it should be kept in mind that sample surveys do not properly represent the very highest incomes.

It is generally believed that the income tax in Great Britain is more progressive than in the United States, and some support for this view may be found in the table. The difference of 3 points between the share of all income received by the top tenth before taxes and that after taxes in the United States is clearly smaller than the corresponding difference of 4 points in Great Britain. But the main conclusion which emerges from the table is that while it may make some difference whether one compares the income distributions before or after taxes, it does not make much difference. In the remainder of this article we shall be concerned only with income before taxes.

The method of dividing the total population into tenths (or some other fraction) is one way of overcoming the difficulty which arises from the fact that each country uses its own *numéraire* or currency as a basis for its measurements. Another is to make a direct estimate of the relation between the two *numéraires*. Since the shape of the distribution of income is broadly similar in the United States and Great Britain,

[8] It is difficult to arrive at definite conclusions about the degree of dispersion at the top of the income scale on the basis of survey data, since it is probable that there is a lower response rate at these levels than amongst middle- and lower-income groups. The British survey of 1954 was less successful in this respect than the 1952 survey and it is probable that the 1954 distribution gives slightly too little weight to the top-income groups.

it is not unreasonable to scale the two distributions in relation to one another by reference to some central tendency. For this purpose we may take the relation between the two medians, which, as we have seen, are in the ratio—for spending units—of $9 to £1. Then, if we translate each range of British incomes measured in pounds into its equivalent in dollars at this "rate of exchange," we can compare directly the proportion of all incomes falling within comparable income ranges. This is done in Table 3.

TABLE 2.—SPENDING UNITS RANKED BY TENTHS ACCORDING TO INCOME BEFORE TAXES AND INCOME AFTER ESTIMATED INCOME TAX LIABILITY,[a] 1952 SURVEYS

Tenths of Spending Units after Ranking by Income before Taxes	Per cent of Total Income Taken by Each Tenth		Tenths of Spending Units after Ranking by Income after Taxes	Per cent of Income after Taxes Taken by Each Tenth	
	U.S.	G.B.		U.S.	G.B.
Top tenth	31	30	Top tenth	28	26
2nd tenth	15	14	2nd tenth	15	14
3rd tenth	12	12	3rd tenth	13	13
4th tenth	10	10	4th tenth	11	11
5th tenth	9	9	5th tenth	9	10
6th tenth	8	8	6th tenth	8	8
7th tenth	6	7	7th tenth	7	7
8th tenth	5	5	8th tenth	5	5
9th tenth	3	3	9th tenth	3	4
Bottom tenth	1	2	Bottom tenth	1	2
Total	100	100	Total	100	100

[a] The taxes covered were: in the United States, federal income tax; in Great Britain, income tax (levied only by the central government), surtax (which is a part of the income tax affecting the highest incomes) and national insurance contributions (which are broadly invariant with income but depend to some degree on sex, age and occupational status).

By this approach we are able to see more clearly where the differences between the two income distributions lie. The most striking difference is between the percentages of spending units receiving a total income of less than £100 or $900. At the other end of the income scale we also find that there are more American spending units than British with incomes above £1,000 or $9,000 and above £2,000 or $18,000. It should be noted, however, that whereas there are more American spending units than British below the level of £100 (or $900), there are more British than American in the next income class running up to £200 (or $1,800). The unusually high frequency of British spending units in this second lowest income class—which actually produces a secondary mode in the distribution—results from the social security arrangements in Britain which give married old-age pensioners an income in this range.

TABLE 3.—DISTRIBUTION OF SPENDING UNITS BY TOTAL INCOME BEFORE TAX IN COMPARABLE RANGES OF INCOME, UNITED STATES AND GREAT BRITAIN, 1954 SURVEYS[a]

(Percentages of spending units)

Comparable Ranges of Total Income		United States	Great Britain
Under £100	($900)	8.3	4.5
£ 100	($900)	11.5	15.7
£ 200	($1,800)	12.7	12.2
£ 300	($2,700)	14.2	14.4
£ 400	($3,600)	14.3	15.2
£ 500	($4,500)	13.5	12.8
£ 600	($5,400)	7.7	9.4
£ 700	($6,300)	5.7	5.4
£ 800	($7,200)	5.2	5.2
£1,000	($9,000)	4.3	3.5
£1,500	($13,500)	1.1	0.9
£2,000	($18,000)	1.6	0.9
Total		100.0	100.0

[a] Percentages in this and subsequent tables do not always add to exactly 100 because of rounding.

The proportion of elderly couples is greater in Britain than in the United States, as can be seen from Table 4. But if elderly married couples in Britain were not receiving a government retirement pension they would not necessarily drop into the next lower income group. Most of them would probably cease to exist as separate spending units, becoming attached to the relatives with whom they already live or with whom they would be obliged to live in such circumstances.

Does the evidence so far presented justify the conclusion that Ameri-

TABLE 4.—AGE DISTRIBUTION OF THE TOTAL POPULATION[a] UNITED STATES AND UNITED KINGDOM, 1954

Age	Number in Millions		Percentages of Total	
	U.S.	U.K.	U.S.	U.K.
Under 10	34.2	8.2	21.0	16.0
10–19	23.9	6.8	14.8	13.3
20–44	57.7	17.9	35.6	35.0
45–64	32.9	12.5	20.3	24.5
65 and over	13.7	5.7	8.3	11.2
Total	162.4	51.1	100.0	100.0

[a] Both distributions are midyear estimates of the total population, including armed forces overseas. Sources: U. S. Dept. Commerce, Bur. Census, *Current Population Reports*, Ser. P-25, No. 146, Washington 1956; U.K. *Annual Abstract of Statistics*, No. 93, London 1956.

can incomes are more unequally distributed than British? It must be admitted that the differences exhibited at the upper end of the income scale are not strictly significant in the sampling sense, and that they could even be the result of some slight difference in response rate amongst upper-income spending units in the two countries. But the difference in the proportion of spending units in the lowest income group in Table 3 is well beyond the bounds of sampling error, in the sense that it could not have occurred by chance from similar populations except in a very small proportion of samples drawn at random.[7] It should also be noted that the differences between the distributions of spending unit income shown by the 1954 figures are not exceptional: similar differences occur in the survey figures for 1952, 1953 and 1955. Moreover, there is reason to believe that the American survey estimates of the proportion of low-income spending units in these years were if anything slightly too low, since new methods of drawing the sample of addresses in the surveys of 1956 and 1957 have revealed the existence of some low-income spending units who were previously overlooked.[8]

Account should also be taken of the influence of certain differences in definition of the basic unit in the two countries. In America the "spending unit" was defined as "all persons living in the same dwelling and related by blood, marriage, or adoption, who pool their incomes for their major expenses." In practice, any person of 18 and over, or a married couple, was treated as a separate spending unit if he (or she or they) earned more than $15 a week and contributed less than half his income to the common housekeeping expenses of the family. The British unit was defined in slightly narrower terms: all persons of 18 or over, and married couples, were to be treated as separate units unless they had an income of less than £50 a year and were living with their relations. No question was asked about the pooling of incomes and no combinations

[7] If the samples had been single-stage random samples the standard error of the difference between these two percentages would have been 0.65 per cent. Although the actual standard error of the difference between the two percentages has not been computed, it is most unlikely to exceed twice this figure, i.e., 1.3 per cent. The actual difference, of 3.8 per cent, is nearly three times this figure. For tables of sampling errors of the Surveys of Consumer Finances see [9].

[8] In 1956 the Survey Research Center made a substantial improvement in its sampling procedures in the field. The most important change was that, instead of relying exclusively on its own *ad hoc* lists of addresses within selected blocks, in many towns and small cities the Center began to make use of city directories. The result has been a more complete listing than could have been obtained by relying exclusively upon either the interviewers' lists or the directories. The dwellings previously missed tended to be small and inconspicuous, and many of them were occupied by low-income spending units. Hence, one result of the change in sampling method was to increase the proportion of spending units with less than $1,000 in the 1956 Survey by about one percentage point. Since the British surveys make use of official lists for drawing addresses, there is unlikely to be a similar bias in the sample coverage in Britain.

of adults were made except in the case just mentioned. In both countries children of under 18 were grouped with their parents or guardians. (The British unit was called an "income unit," but for convenience the basic unit for both countries is referred to as a spending unit in this article.)

If the British definition of the spending unit had been used in America it might have been laid down that all persons with $500 or more of separate income should be treated as separate spending units, irrespective of whether they pooled the greater part of their income with the rest of the family or not. To investigate this possibility a special analysis of the composition of the spending unit was made, which is sum-

TABLE 5.—COMPOSITION OF THE SPENDING UNIT IN THE UNITED STATES AND GREAT BRITAIN, 1954 SURVEY

(Persons per 100 SU's)

	U.S.	G.B.
Married couples (2 persons per SU)	143	115
Single male heads of SU's	10	16
Single female heads of SU's	18	26
Total primary adults	171	157
Secondary adults with less than £50 or $500	13	1
Secondary adults with $500 or more	4	—
Total secondary adults	17	1
Children under 18	102	67
Total persons	290	225

marized in Table 5. The number of persons who, on the British definition, would have been treated as separate spending units, but were in fact combined with others in the American survey, amounted to only 4 per 100 American spending units. This is the measure of the difference introduced by the difference of definition. It means also that, had the American spending units been grouped according to the British rule (and taking $500 as roughly equivalent to £50) the average size of the American spending unit would have fallen only from 2.90 to 2.79.

Although only 4 per cent of American spending units would be treated differently according to the British rules, the effect of dividing up these spending units into separate "British" units would be to increase the number of low-income spending units in America. From a special analysis of American spending units in the 1954 survey it appears that nearly half the "secondary" adults with $500 or more of

income, who would have been treated as separate spending units in Britain, had less than $1,000 of income. Moreover, if they were separated off, the parent spending units—with whom they were originally combined—would lose part of their income and some of them would fall below the $1,000 level. The net result of applying the British definition would therefore, be, that the proportion of spending units with

TABLE 6.—NUMBER OF PERSONS IN THE SPENDING UNIT, UNITED STATES AND GREAT BRITAIN, 1954 SURVEYS

(Percentages of total spending units)

Number of Persons	United States	Great Britain
One	21	40
Two	29	26
Three	17	16
Four	16	10
Five	9	5
Six or more	8	3
Total	100	100
Mean number per SU	2.90	2.25

less than $1,000 would increase from 9.5 per cent to 11.6 per cent. It can be presumed that the proportion of spending units with less than $900 would rise from the 8.3 per cent shown in Table 2 to at least 10 per cent.

Finally, it should be taken into account that the British population contains far more single-person spending units than the American population. As shown in Table 5, there are 42 unmarried heads of spending units per 100 spending units in Great Britain compared to 28 per 100 in the United States. Similarly, in Britain the proportion of spending units containing only a single individual is nearly twice as high as in the United States (Table 6). Since the incomes of single-person spending units are on the average much lower than the incomes of multi-person spending units, which often include more than one income receiver, this difference in demographic structure would tend, *ceteris paribus*, to produce more low-income spending units in Britain than in America. A study of the British figures reveals that almost all the spending units with less than £100 of income in the 1954 survey were single-person units. Hence, if the proportion of all British spending units which were single persons had been as low as in America the effect would have been to reduce the proportion of under £100 spending units in the whole sample from 4.5 to less than 3 per cent.

In view of all this, there can be no doubt at all that there is a significant difference between the proportion of low-income spending units in

Britain and in the United States. The next task is to consider what features of the two countries are responsible for this difference.

II. *Reasons for the Differences in the Distribution of Income*

Differences in the distribution of income from one country to another may reflect differences in the allocation of the labor force to the major types of occupation. For example, since there is an international tendency for the mean income paid skilled workers to be larger than that paid to unskilled workers, differences in the proportion of manual workers of different levels of skill may lead to differences in the distribution of incomes between two countries. Even if two occupation groups have the same mean income, if the distributions of income for the two groups differ in dispersion the allocation of the labor force between them will influence the distribution of income in a country. It is also possible for differences to exist in the relative economic position of occupation groups from one country to another.

There is in fact a fundamental difference in the structure of the American and British populations in respect of the occupations of the people. The next to the bottom row of Table 7 shows the distributions of spending units by the occupation of the head, as derived from the surveys. A comparison based on census data would yield very similar results.

It should first be noted that, largely as a consequence of the difference in age structure, there is a larger proportion of retired and unoccupied heads of spending units in Britain than in the United States. Some part of this difference is also caused by the fact that more elderly Americans are living as dependents of their children and are consequently not treated as heads of spending units. On the other hand, more Americans are unoccupied because of unemployment. Amongst the occupied heads of spending units the most striking difference is in the much larger proportion of self-employed in America. A substantial part of this difference is due to the difference in the number of farmers in the two countries. In Britain only one per cent of spending unit heads are farmers, compared with 8 per cent in the United States. (In total the United States has about 4 million farmers, against about 350,000 in Great Britain.)[9] But it is clear that there are also proportionately more persons in the United States who have their own business or professional practice than in Britain.

[9] The figures refer to the number of persons whose major occupation is farming. In the United States part-time farming is not unusual, and it is also common for persons living in farm families to obtain income from activities other than farming. In addition there are in both countries many spare-time and hobby farmers.

TABLE 7.—DISTRIBUTION OF SPENDING UNITS BY OCCUPATION OF THE HEAD IN COMPARABLE RANGES OF INCOME, UNITED STATES AND GREAT BRITAIN, 1954 SURVEYS

(Percentages of spending units in each group)

Comparable Ranges of Income		Managers & Technical		Clerical & Sales		Skilled Manual		Unskilled Manual		All Self-Employed		Farmers	Other Self-Employed	Retired and Unoccupied[a]	
		U.S.	G.B.	U.S.	G.B.	U.S.	G.B.	U.S.	G.B.	U.S.	G.B.	U.S.	U.S.	U.S.	G.B.
Under £100	($900)	0.3	0.1	1.1	0.1	1.1	—	10.3	2.2	10.8	3.9	20.7	2.3	29.6	18.6
£ 100	($900)	2.0	2.2	4.5	15.4	4.2	3.5	19.8	12.8	14.3	7.0	21.6	8.1	29.3	49.0
£ 200	($1,800)	4.7	5.3	14.2	19.4	9.6	7.1	22.9	23.8	13.4	11.4	20.6	7.3	15.8	13.9
£ 300	($2,700)	6.0	5.0	18.7	16.9	15.5	18.9	20.2	19.9	13.5	10.1	15.5	11.7	10.9	7.2
£ 400	($3,600)	11.7	9.9	20.4	11.9	21.2	22.0	11.6	22.5	8.1	10.1	5.0	10.7	4.9	3.8
£ 500	($4,500)	19.6	11.9	14.3	14.3	20.6	20.8	7.9	7.8	7.6	8.5	2.9	11.5	4.4	2.1
£ 600	($5,400)	11.0	11.1	10.0	9.7	11.3	13.7	4.4	7.3	4.3	13.7	3.4	5.1	1.8	0.7
£ 700	($6,300)	13.5	13.0	6.5	6.2	7.1	6.2	1.6	3.7	3.9	7.2	1.5	6.0	1.1	0.6
£ 800	($7,200)	12.9	14.6	5.4	5.1	6.4	6.0	0.8	—	4.9	8.2	3.5	6.0	1.1	1.6
£1,000	($9,000)	12.5	17.6	4.2	0.7	2.9	1.6	0.6	—	8.1	10.9	1.3	13.8	}	}
£1,500	($13,500)	3.4	5.1	0.4	0.2	—	—	—	—	3.8	3.6	1.9	5.5	} 1.1	} 2.5
£2,000	($18,000)	2.4	4.2	0.3	0.1	0.1	0.2	—	—	7.4	5.4	2.1	11.9	}	}
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Per cent of all heads of spending units[b]		11	10	12	11	32	38	11	13	17	7[c]	8	9	16	21
Number of cases		410	426	391	342	887	817	273	249	555	242	227	328	449	387

[a] Includes housewives, students and unemployed.

[b] Spending units with heads whose occupation was not ascertained amounted to 1 per cent of the total for the U.S.

[c] Of the 7 per cent self-employed in Great Britain, 1 per cent were farmers and 6 per cent, other self-employed.

These differences should be interpreted in the light of the distributions of income for spending units classified by the occupation of the head of the unit, shown in the columns of Table 7. The classifications used were, as far as possible, the same in both countries; but there may have been some differences in the treatment of marginal cases, especially in allocating occupations between the two white-collar classes or between the two categories of manual workers. In view of these difficulties in securing identical standards of classification we should not make too close a comparison of the distributions.

Considering the large proportion of units headed by retired and unoccupied persons in both countries, and especially in Great Britain, it is particularly important to compare the income distributions of these spending units, given in the last columns of Table 7. While the bulk of spending units of this sort in both countries lie in the bottom income classes, more American spending units are in the very lowest class. The reason for this difference is doubtless the existence of a more extensive social security system in Britain, which lifts most of the lowest-income class of retired and unoccupied persons up to at least the second income class.[10]

Take next the distributions of income for the self-employed. Table 7 includes a comparison—in comparable ranges of income—of the distribution of all spending units headed by self-employed persons in Britain with three arrangements of American self-employed spending units: all combined, farmers only, and the remainder. In the case of the aggregate groupings for the two countries, while the distribution at the upper end of the income scale is not dissimilar, the distribution at the lower end is quite different. There are more American self-employed in the low-income groups than there are British. The reason for this is immediately apparent when we divide the American self-employed into farmers and nonfarmers. In Britain the number of farmers is so small as to make little difference to the total picture; and, in any case, they are distributed by income in much the same way as the other self-employed. In America, on the other hand, the income distribution of farmers is quite different from that of other self-employed. The latter are distributed broadly along the same lines as the British self-employed, with perhaps a greater tendency to reach high-income levels; but American farmers are distributed quite differently, with a high concentration in the low-income classes.

One important reason, then, for the differences between the British and American distributions of income is the low average income of the

[10] Of the heads of spending units aged 65 and over in the 1954 surveys, 80 per cent were in receipt of government transfers in Britain, compared with only 58 per cent receiving either government or private transfers in America.

American farmer. In the 1954 Survey the average total income of American farm operator spending units was a little over \$3,000 compared with about \$4,700 for all other spending units. Part of this difference can be explained by the exclusion of nonmoney income from the American survey definition of income; but, even with due allowance for this, American farmer spending units would have on the average not more than about three-quarters of the income of other spending units.[11] A large proportion of American farmers fall in the two bottom income classes in our distribution; and it is clear that it is they who contribute quite substantially to the "extra" low-income spending units in America compared with Britain.

In general, the distributions for the remaining occupations are remarkably similar; and in the case of spending units headed by skilled manual workers they are almost identical. Amongst the managers and technical, professional and administrative workers the distributions at the lower end of the scale are similar but they differ somewhat at the upper end. There are more British manager spending units with incomes between £1,000 and £1,500 than American manager spending units with incomes of \$9,000-\$13,500. Some of this difference, however, may be caused by a different allocation in the two countries of marginal cases between the "manager" group and the "clerical and sales" group. In the latter group there are more American spending units with high incomes than there are in Britain.

The only remaining major difference to be found in any pair of distributions is between the distributions of spending units headed by unskilled manual workers. In this case a substantially larger proportion of American spending units are in the two lowest income classes.

Are there any special reasons why so many American farmers and unskilled workers should fall in the lowest income class? In the case of farmers it may be said that the tendency for farmers' incomes to fall below other incomes is world-wide, with only a few exceptions, of which postwar Britain is one. But the other exceptions include such newly developed countries as Australia and New Zealand [3]. In the United States, farm income per worker has been lower than nonfarm

[11] An interesting sidelight on the relative positions of farmers in Britain and America is given by the fact that while the average American farmer has only three-quarters of the average income of other American spending units, the British farmer has about twice the average income of other British spending units. American agriculture ranges from large mechanized farms using highly rationalized techniques to the numerous small low-income farms which populate the Appalachian region. The rapid rate of investment in farming plus the improvements in agricultural technique in recent years have increased the productivity of one group of farmers while reducing others to a marginal or submarginal status. Thus many American farmers, especially in the Southern Appalachians, belong to an impoverished and dying class. The British farmer on the other hand is, broadly speaking, just another businessman.

income per worker for many years. Available statistics suggest that the farm worker was even worse off compared to the nonfarm worker in 1910 than in 1954 [4, pp. 23-28]. It is, therefore, not surprising that the farm labor force in the United States declined from 11.5 million in 1910 to 9.5 million in 1940, 7.5 million in 1950 and 6.6 million in 1955. What is not clear on the face of it is why, even in 1954 after 15 years of industrial prosperity in America, so many farmers should have continued to accept such low incomes.

Part of the answer, we suggest, lies in another feature of the American scene, namely, the lack of homogeneity of the labor force. An analysis of spending units with less than $1,000 income (in the 1954 survey) by both occupation and race reveals that more than a third of the low-income farmers were Negroes and more than a third of low-income unskilled workers were either Negroes or other colored persons. This compares with a figure of 11 per cent of colored heads of spending units in the whole population. Negro farmers, almost all of whom are in the South, comprise about one-sixth of all farmers, but half of them—according to the 1954 survey—have money incomes of less than $1,000. In the case of the unskilled the situation is different. The concentration of colored workers in the low-income class of the unskilled is mainly attributable to the fact that a quarter of all unskilled workers are colored. In addition, the proportion of colored unskilled in the lowest income class is slightly greater than the proportion of white unskilled.

It seems reasonable to conclude that one factor making for the existence of a fairly large proportion of low-income spending units in America is the racial heterogeneity of the population. Negroes and other colored people are often of low education, and frequently suffer from other disabilities when in competition with whites in the labor market. Hence they tend to crowd into low-paid occupations and to earn less than would be acceptable to white members of the community. The British population, on the other hand, is nearly homogeneous and does not contain significant groups of workers who can be paid at lower rates than the generally accepted minimum. It can be expected that the progress of integration and the increasing industrial and geographical mobility of the Negro population will sooner or later eliminate this factor in the creation of low-income spending units in the United States. Similarly, the gradual extension of improved social-security arrangements to cover all sections of the population will reduce the number of retired and unoccupied spending units falling in the lowest income class.

III. *The Distribution of Capital*

A reasonably complete picture of the economic situation of an economic unit, or group of economic units, requires a knowledge of their

balance sheets as well as of their income distributions. Data on the total value of capital owned by spending units have been collected occasionally though not annually in the British and American surveys. In this paper, the comparisons of capital ownership will be based on the American survey of 1953 and the British survey of 1954. Since the pattern of capital ownership changes very slowly this discrepancy of one year is of no importance.

The aim of the surveys in this field was to discover for each spending unit the current value of its total net worth—that is, its assets minus its liabilities. So far as possible all assets and liabilities were covered; but, some were excluded because of expected difficulties in obtaining full and accurate information about them.[12] Estimates by Goldsmith [5, p. 107] suggest that the total value of the excluded items for the United States in 1949 was nearly a third of aggregate personal net worth.

Both surveys exhibit a tendency to underestimate the aggregate value of both assets and liabilities. There are no perfectly suitable outside benchmarks for comparison, but there seems little doubt that the amount of personal liquid assets revealed by each survey is only about two-thirds of the aggregate stock in the hands of private households. The explanation of this understatement is probably twofold: first, that the surveys fail to secure the cooperation of a few wealthy people who hold a large proportion of all financial assets; and secondly, that some people who do cooperate with the surveys in most respects are reluctant to give complete data on their financial assets. These influences tend to produce a similar degree of understatement of holdings of corporate stock (and in Britain of government securities). In respect of non-financial assets—such as cars, houses, farms and businesses—there are fewer grounds for expecting understatements to occur. Assets of this

[12] Assets included owner-occupied homes, farms and unincorporated businesses (where owner-occupied house formed part of a building used also as a farm or for other business purposes, value of house included with value of farm or business), other real estate, cars, liquid assets, marketable stocks or shares, loans made to persons. Liquid assets included deposits in savings banks, other banks, and such financial institutions as savings and loan associations in the United States and building societies and cooperative societies in Great Britain; holdings of fixed-value government bonds such as U.S. savings bonds and G.B. defence bonds and savings certificates; also, in the United States, other federal government bonds. Marketable stocks or shares included: in Great Britain the value of all private and government bonds, except defence bonds and savings certificates; the estimated market value of "private company" shares; and in the United States the value of privately held corporations, which was included with the value of unincorporated businesses. Excluded assets were currency, consumer durables other than houses and cars, the value of insurance policy and pension fund reserves, assets held by trust funds and, in the United States only, private, state and local, and foreign bonds.

Liabilities included mortgage debt, instalment debt, bank debt, debts to other institutions and persons except charge accounts with retailers.

sort are visible and identifiable, and people are, on the whole, less reluctant to talk about them [6].

As a result of the downward bias on estimates of financial assets, the surveys underestimate the value of total assets, and to some extent of liabilities, especially of instalment debt. This understatement is, of course, additional to the understatement which arises from the restricted coverage of assets mentioned above. So far as the available evidence permits us to judge, the tendency towards understatement of financial assets is very similar in Britain and the United States; and it seems probable that the aggregate understatement of net worth which results from this bias, as well as from the restricted coverage of assets, is of the same order of magnitude in both countries. The influence on the distributions of spending units by size of net worth is also likely to be similar. It seems legitimate, therefore, to use the comparisons of the survey distributions of net worth as broadly indicative of the relative distributions of total net worth in the two countries.

In the American survey of 1953 it was found that nearly 85 per cent of spending units had some positive net worth, 4 per cent had exactly nothing, and 11 per cent had debts which exceeded their assets (see Table 8). Had consumer durables other than cars and houses been included in the survey definition of net worth, there would not have been any spending units with exactly zero net worth, and it is doubtful whether there would have been any with negative net worth. In the British survey of 1954—on the same basis—it was found that only 66 per cent of spending units had some positive net worth, 21 per cent had nothing and 13 per cent had liabilities exceeding their assets. These figures draw attention to the first great difference between the two countries—a difference which is fundamental to our understanding of the comparisons which follow. Property is much more widely distributed in America than in Britain. There are comparatively few Americans who own nothing: there are many Britons who own nothing, or next to nothing.

In order to compare the two distributions of net worth over their whole ranges it is necessary to decide on an appropriate "rate of exchange" between pounds and dollars. We could have taken the same ratio as we used for the comparison of incomes—$9 to the £—but in order to avoid special tabulations, and since the comparison of net worth is in any case less exact, we have taken the ratio of $10 to the £. (Mean net worth per spending unit was about $12,000 in the United States and £1,100 in Britain—a ratio of nearly $11 to the £.) In Table 8 the two distributions are given in comparable ranges of net worth on this principle. From the detailed comparison of the distributions it will

be seen that, even amongst those spending units with some positive net worth, the British distribution is more unequal than the American. Both at the bottom of the distribution and in the highest net worth group the percentage of British spending units exceeds the percentage of American spending units in comparable class intervals. At the same time, the percentage of American spending units in the range of net

TABLE 8.—DISTRIBUTIONS OF SPENDING UNITS BY COMPARABLE RANGES OF NET WORTH, UNITED STATES AND GREAT BRITAIN

(Percentages of spending units)

Comparable Ranges of Net Worth[b]	United States 1953[a]	Great Britain 1954
Negative	11	13
Zero	4	21
Under £50 ($500)	10	14
£ 50 ($500)	6	6
£ 100 ($1,000)	10	8
£ 200 ($2,000)	11	8
£ 400 ($4,000)	8	5
£ 600 ($6,000)	11	5
£1,000 ($10,000)	15	8
£2,000 ($20,000)	10	7
£5,000 ($50,000)	4	5
Total	100	100

[a] Some of the figures for individual groups in this column have been estimated by interpolation.

[b] In both distributions there were a certain number of cases in which, because one or more components were not ascertained, total net worth was not exactly known. In these cases values of net worth were assigned on the basis of the information available about the spending unit, such as its income, age and occupation and the assets actually reported. There were 9 per cent of spending units in the American survey which were given assigned values in this way and 8 per cent in the British survey.

worth from $4,000 to $20,000 is almost twice as great as the percentage of British spending units in the comparable range of net worth—£400 to £2,000. Altogether nearly half of American spending units have $4,000 or more, against only 30 per cent of British spending units with more than £400.

The differences between the British and American distributions of net worth are further illustrated in Chart 1. The two Lorenz curves deviate very substantially from one another, a pattern in marked contrast to the relative similarity of the Lorenz curves of income. The estimation of Lorenz curves by survey methods is subject to rather large errors, both for the reasons referred to in the last section and because of sampling fluctuations; but the differences between the net-worth curves shown here are so large that it is impossible to believe that they

do not reflect a real underlying difference between the two countries.

If there are more American spending units who have *something*, what sorts of assets do they have? The answer, which is most instructive, is given in Table 9. The wider distribution of assets amongst the American population is primarily a result of the more widespread

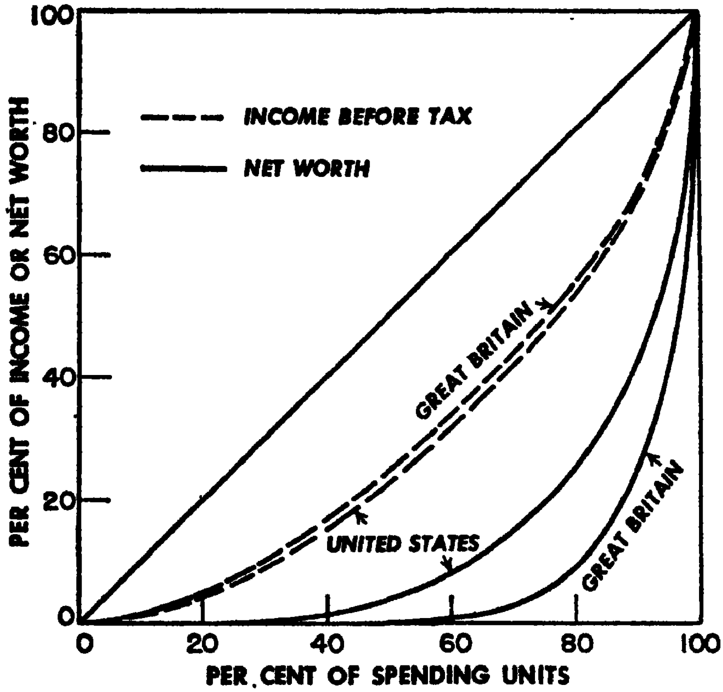


CHART 1. LORENZ CURVES OF INCOME AND NET WORTH, UNITED STATES AND GREAT BRITAIN

ownership of physical assets—homes, other real estate, farms, businesses and cars. In respect of financial assets, on the other hand, the difference between the two countries is much less. A slightly larger percentage of American spending units own some liquid assets and some corporate stock. A slightly larger proportion of American spending units own life insurance policies also.

We turn now, as we did in the case of income, to consider the differences between the distributions of net worth within occupational groups. The main differences between occupations can be appreciated from the data presented in Tables 10 and 11. The first table, which gives the percentage of spending units in each occupation group who have some positive net worth, shows that the over-all difference between the British and American patterns of property ownership is largely attributable to differences between the lower-paid occupations

TABLE 9.—PERCENTAGES OF SPENDING UNITS OWNING SPECIFIED ASSETS, UNITED STATES AND GREAT BRITAIN, 1954 SURVEYS

	United States	Great Britain
Physical Assets		
Owner-occupied home	45	22
Other real estate	14[a]	4
Farm, business or professional practice	17[c]	7[c]
Car	66	11
Financial Assets		
Any liquid assets	74	69
Corporate stock	10[a]	7[b]
Life insurance	75	69

[a] 1953 figure.
[b] Includes owners of any marketable stocks or bonds or shares in private companies.
[c] Excludes farms, businesses or professional practices owned by persons other than heads of spending units.

in the two countries. Property is more widely held in America than in Britain, not because the higher-paid occupations have more property in America, but because more manual workers, more clerical and sales workers, and more retired and unoccupied persons have property in America.

The primary reason for these differences is that more Americans in these occupation groups own their own homes and their own cars. For example, over 40 per cent of unskilled American heads of spending units own their own homes, compared with 16 per cent in Britain; 50 per cent own a car, compared with only 1 per cent in Britain. The differ-

TABLE 10.—NET WORTH IN DIFFERENT OCCUPATION GROUPS UNITED STATES AND GREAT BRITAIN

Occupation of Head of Spending Unit	Percentage of Spending Units with Positive Net Worth		Relative Net Worth[a]	
	U.S. 1953	G.B. 1954	U.S. 1953	G.B. 1954
Self-employed	94	94	254	392
Farmers	91	N.A.	176	N.A.
Others	97	N.A.	328	N.A.
Managers and technical	93	91	119	223
Clerical and sales	91	71	58	44
Skilled manual	84	65	44	28
Unskilled manual	64	45	25	23
Retired and unoccupied	81	58	124	157
All Spending Units	85	66	100	100

[a] Mean net worth of each group expressed as a percentage of the mean for all spending units in the population.

TABLE 11.—RELATIVE IMPORTANCE OF NET WORTH COMPONENTS IN DIFFERENT OCCUPATIONAL GROUPS, UNITED STATES AND GREAT BRITAIN

(Percentages of the total net worth of each group of spending units)

Net Worth Component	All Spending Units		Self-employed		Managers, Clerical and Sales		Manual Workers		Retired and Unoccupied	
	U.S. 1953	G.B. 1954	U.S. 1953	G.B. 1954	U.S. 1953	G.B. 1954	U.S. 1953	G.B. 1954	U.S. 1953	G.B. 1954
Own home (net of mortgage debt)	31	27	14	9	39	35	61	54	35	24
Unincorporated business or farm (net of mortgage debt)[b]	28	19	59	66	8	1	1	2	—[a]	—[a]
Other real estate (net of mortage debt)	13	6	10	4	13	6	11	6	24	8
Cars	6	2	4	3	9	4	12	3	2	1
Total physical assets (net of mortgage debt)	78	54	87	82	69	46	85	65	61	33
Liquid assets	14	23	10	11	20	28	18	37	13	24
Marketable stocks and bonds	9	23	3	7	12	27	2	2	26	42
Loans made	2	1	1	1	2	—[a]	1	—[a]	2	1
Less: Personal debt[c]	−3	−1	−1	−1	−3	−1	−6	−4	−2	—[a]
Total financial assets (net of personal debt)	22	46	13	18	31	54	15	35	39	67
Net Worth	100	100	100	100	100	100	100	100	100	100

[a] Less than half of one per cent.
[b] Includes owner-occupied homes forming part of a business or a farm.
[c] Nonmortgage debt, e.g. instalment debt, bank loans, loans from insurance companies.

ences in the proportions owning liquid assets are much less: 61 per cent in America against 47 per cent in Britain.

These figures suggest that in respect of property ownership there is more difference between the social classes in Britain than in the United States. A similar impression is given by the figures in the right-hand portion of Table 10, which show the average net worth of each occupation group expressed as a percentage of the average for all spending units in the same country. We see that the British self-employed are more above average in wealth than the American self-employed—though this is partly due to the position of American farmers, who are not as rich as other American self-employed. British spending units headed by managers and technical employees have net worth which is more than twice the all-British average, while American spending units in this group have net worth only slightly above the all-American average. At the other extreme, British manual worker spending units—especially skilled manual workers—are relatively badly off. The gap between them and the managers is very great, while in America it is only moderate. These figures tell the same story of more inequality in Britain, but from a slightly different point of view.

Another way of looking at the matter is to consider the composition of the aggregate personal balance sheet in Britain and America. For reasons already mentioned, the surveys are not very accurate instruments for measuring aggregate net worth or its components; but a broad interpretation of the survey data will help to throw some light on the pattern of capital ownership in the two countries. A percentage breakdown of aggregate net worth for all spending units and for four occupational groups is given in Table 11.

In this table the assets have been grouped, as previously, under two headings; physical assets and financial assets. Wherever possible liabilities have been offset against their related assets, so that only the net contribution of each asset to total net worth is taken into account. Thus mortgages on owner-occupied homes are deducted from the gross value of the dwellings concerned, and similarly with other property. It might have been useful to have deducted instalment debt on cars from car values; but the data were not available for Great Britain, and in any case some debt which is owed to banks and other institutions was originally incurred in order to finance car purchases. So all nonmortgage debt—called personal debt—has been offset against total financial assets.

The first thing to notice in the table is that net physical assets represent a much larger proportion of aggregate personal net worth in the United States than in Britain. A small part of the difference comes from owner-occupied homes and a similar amount from cars; but the

biggest differences are in the proportions of capital represented by unincorporated businesses and farms and other real estate. It was to be expected that farms and businesses—especially farms—would bulk more largely in the United States than in Britain, since so many more American spending units own one or the other of these. We have also observed that more American spending units own other real estate. But the general significance of these facts now seems clearer: it is that more Americans have direct investments in land. This land may include either their own homes, or farms, or other real estate.

There is, perhaps, nothing surprising in this. The continental United States contains nearly 2 billion acres of land; Great Britain only 56 million acres. Much of the United States was originally settled by homestead farmers, while the pattern of property ownership in Britain has evolved slowly from the opposite extreme of a feudal concentration in the hands of large landowners. Despite the movement in America from country to town and the broadening of property ownership in Britain in modern times, each country's past still leaves a strong imprint on its present structure.

An additional difference between the two countries arises from the difference in social philosophy with respect to public ownership of rental housing. In the United States there are only about half a million publicly owned housing units, amounting to about one per cent of all dwelling units. In Great Britain about one-fifth of all households live in council houses.

The over-all difference between British and American spending units in the arrangement of their assets is reflected in each of the occupational groups shown in Table 11. The difference is least marked—as might be expected—in the case of the self-employed; but even amongst this group an appreciably higher percentage of total assets is represented by other real estate in America than in Britain. The proportion of financial assets is smaller for each group in America than it is in Britain, and it is interesting to note that in every group British spending units keep a higher proportion of their total capital in liquid assets.

This bias towards liquidity is a marked feature of the British situation. The reasons may be partly the continuing overload of liquid assets from the war years and partly a tradition of putting savings into liquid rather than into other forms. The savings movement in Britain has a long and powerful tradition, and it has stimulated the accumulation over the years of very large sums in the various savings institutions and in special savings securities. The trend has been aided by the tax advantages offered to investors in many of these assets. It is possible also that the greater proportionate holding of liquid assets in Britain is a con-

sequence of there being fewer alternative outlets for savings—especially into real estate and private business.

The ratio between aggregate net worth and aggregate income in the United States is not significantly different from the ratio between these two aggregates in Britain. It is not possible to explain the greater equality of distribution of net worth in America simply as the result of there being a greater total quantity of capital in America. Rather there is a tendency for each major type of asset to be more narrowly held in Britain. More American real estate is held directly by its occupiers or is distributed amongst a fairly wide group of small property owners; more British real estate is in the hands of large owners and companies. The same is true of financial assets. Not only do British spending units keep a larger proportion of their total capital in financial assets—which are potentially a more concentrated form of property than, say, owner-occupied homes and farms—but these financial assets themselves are more unequally distributed in Britain than in the United States. For example, the top tenth of owners of liquid assets hold about three-quarters of the total in Britain compared with less than two-thirds in the United States. In every respect the distribution of property is more widely spread in America than in Britain.

IV. *Conclusion*

On the basis of comparisons of survey data from Britain and the United States it appears that pre-tax income per spending unit is, in general, very similarly distributed in the two countries. The only significant discrepancy is that the United States contains more relatively-low-income spending units. The reasons for this are the existence of a large population of low-income farmers in America, the extensive program of social security in Great Britain, and the existence of a larger group of low-income unskilled manual workers in the United States. An underlying cause seems to be the greater racial heterogeneity in America.

When we turn from a comparison of income distributions to a comparison of the distribution of capital, it is the British distribution which is more unequal than the American—and quite substantially so. More Americans directly own physical assets, such as their own homes, businesses, farms or other real estate. Even within the group of financial assets, the distribution is more unequal in Britain than in America.

In the modern world there are two opposite trends in the distribution of capital—both in Britain and in America. On the one side, in relation to producers' goods, there is great concentration of ownership in the hands of the big corporations which, in turn, are owned by a small fraction of the population. On the other side, there is a trend to-

wards a greater diffusion of ownership of consumer durables. This latter trend, which is the result of a rising standard of living, is evidenced by the spread of owner-occupation of houses and by the growing importance of cars and other consumer durables. It may be that the process of concentration of producers' capital has still some way to go in the United States; but in Britain a spreading ownership of homes and cars will develop as the standard of living rises. It is possible, therefore, that the distributions of property in the two countries will gradually move closer together. This development is to be expected also on the general ground that countries with such similar income distributions are unlikely to retain permanently such large disparities in the distribution of property.

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UNION WAGE POLICY IN HEAVY CONSTRUCTION: THE ST. LAWRENCE SEAWAY

By DONALD E. CULLEN*

From its explosive emergence in the 1930's, the "new unionism" which has since swept through most of manufacturing has so dominated the American labor scene that most of the postwar interest in union wage policy has centered on industrial unions. Within this same period, however, unions in an important sector of the construction industry have been forced to fashion a wage policy in response to conditions quite unlike those found in any other industry. On many of the huge "heavy construction" projects which have become relatively common in the last twenty-five years, unions in the building trades have bargained from an unparalleled position of strength and yet have often exercised a curious restraint in their wage demands. In this case study of collective bargaining on the St. Lawrence Seaway and Power Project, it is suggested that union wage policy in heavy construction can be fully understood only in terms of the high priority which union leaders justifiably attach to their continued control over the hiring process in this industry.

I. *The Setting*

Construction projects on the order of the great dams of the West, the vast TVA complex, and the several atomic-energy installations typically require several years to complete and involve attracting a labor force of several thousand into an isolated area to work long hours for contractors faced with a relatively inelastic demand schedule—all conditions at sharp variance with those usually found in local building. The St. Lawrence Seaway and Power Project is in many ways a perfect model of this type of construction project and of the unique bargaining situation which tends to prevail on these projects.

The Seaway[1] is a billion-dollar, five-year undertaking which will re-

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[1] Although the over-all project will be referred to hereafter by its popular designation as "the Seaway," the power aspect actually dominates the construction phase, accounting for two-thirds of the project's total cost and an even higher proportion of total employment.

sult in 1959 in the world's second largest hydroelectric installation together with a waterway expected to transport more tonnage than the Panama Canal. The Seaway itself is being jointly financed and constructed by the federal governments of Canada and the United States, while the power project is a joint undertaking of New York state and the province of Ontario.

In the summer of 1956, at the time of this study, the project was 30 to 40 per cent completed. Well over 75 general and specialty contractors were employing a peak labor force of about 14,000, divided about equally between nationals of the two countries. In order to ensure Canadian contractors an adequate supply of labor at Canadian rates, an agreement had been reached among the government agencies concerned that no Canadians would be hired by American contractors as long as American workers were available, an agreement which American unions have not been loath to enforce. Thus, Americans work on American projects under American labor agreements and Canadians, covered by their own very different agreements, work exclusively on Canadian projects. The importance of this artificial but highly effective barrier between contiguous labor markets may be gauged by the fact that wage rates for American workers on the Seaway are from 25 to over 50 per cent higher than rates for Canadian workers performing identical tasks a few hundred yards away.

The American construction area is in the heart of what is known as "the North Country" in New York state, a dairy farming region which has justifiably been termed one of the most economically depressed areas of the state. It is generally agreed that prior to the advent of the Seaway most of the building trades in this area were weakly organized. Thus, Table 1 reveals that in July 1954, a short time before construction began on the Seaway, most union building rates in the North Country were not only below those in the nearest upstate cities but also fell short of the national averages[3] and, of course, far short of New York City rates.

Although it was expected that local non-Seaway construction would experience a temporary drop in activity for lack of manpower, the volume of such construction may well have increaseed as a result of several

[3] The apparent exceptions of the cement finishers and structural-iron workers are misleading. Neither trade was extensively used in the small building work characteristic of this area before the Seaway, with the result that no distinction was made between bricklayer and cement finisher (the latter normally receives a much lower rate). The rate for ironworkers, on the few occasions needed, was simply the Syracuse rate plus 25¢ for travel. The low teamster rate in Syracuse is a local quirk; the union happens to be very weak in this particular situation. Watertown represents the North Country in these comparisons because it is the center of union strength in this region and its rates applied to union work in Massena, the subsequent scene of Seaway construction.

relatively large projects newly begun in the area, some of them stimulated by the Seaway itself. Nearly all of these projects were operating under union contracts and all were clearly intensifying the pressures upon the local supply of both union and nonunion building tradesmen, a supply which from the beginning was inadequate to man the Seaway.

TABLE 1.—UNION WAGE RATES IN SELECTED BUILDING TRADES AND AREAS, JULY 1954[a]

Trade	Watertown	Albany	Syracuse	New York City	Average for U.S.
Bricklayer	$3.24	$3.22½	$3.27½[c]	$3.80	$3.39
Carpenter	2.75	2.80	2.89½[c]	3.40	2.90
Cement finisher	3.24	3.22½	2.90[c]	3.40	2.87
Electrician	2.90	3.30	3.20	3.30	3.09
Laborer	1.90	2.11	2.12½[c]	2.55	1.96
Operating engineer[b]	3.10	3.53½	3.27½[c]	3.90	n.a.
Painter	2.50	2.45	2.50	2.89	2.77
Plumber	2.92[c]	2.93½[c]	3.10½[c]	3.50	3.12
Structural-iron worker	3.30	3.05	3.05	3.75	3.08
Truck driver	1.90	2.10	1.63	2.40	1.98

[a] Rates are primarily for building construction.
[b] Heavy equipment classification.
[c] Includes welfare fund contribution paid by employer. Since such payments are not reported by the B.L.S. for New York City and the U.S., they are included in the other rates only when base rates alone would give a false picture of the relative wage position of these three cities.

Sources: Watertown, Albany, and Syracuse rates: *The Building Industry*, monthly publication of the Building Industry Employers of New York State, Aug. 1954. New York City and United States: Bur. Lab. Stat., *Union Wages and Hours: Building Trades, July 1, 1954*, Bull. No. 1175, Washington 1955; and *Union Wages and Hours: Motortruck Drivers and Helpers, July 1, 1954*, Bull. No. 1178, Washington 1955.

Turning to the other side of this labor market, it might be expected that union bargaining power could be easily contained by the combined power of the many Seaway contractors, several of whom rank among the largest construction employers in the world and all of whom obtained their Seaway contracts as a result of competitive bidding rather than on a cost-plus basis. Yet, as several authors have noted, e.g. [3, p. 45] product demand is much more inelastic for government-financed construction than for most categories of private building. There is only one place where the Seaway can be built and, within wide limits, its ultimate cost will have little effect upon future decisions to build a dam in

Oregon or a powerhouse in Tennessee.[8] *Therefore, competing contractors on this type of a project "must be concerned with the relationship of their costs to other firms in the industry, but not with their general level. Attention is focussed more on the uniformity rather than the height of wage rates" [1, p. 33]. Through the union devices of prehire agreements and uniform rates, labor cost was thus largely removed as a competitive element in bidding on Seaway contracts.*

The effect of competitive bidding on wages is further lessened by two other practices on the Seaway. First, the letting of the various construction contracts has been spread out over the life of the project, which reduces uncertainty in many cases as contractors have to estimate costs for only a year or two in advance, or the term of many of the labor contracts, rather than for the entire five years. Also, not only are most of the labor contracts of at least two years' duration, but those covering five important trades—the carpenters, laborers, teamsters, operating engineers, and cement finishers—feature a unique continuation or "carry-over" clause, which guarantees that workers on jobs bid in a particular year shall continue to receive that year's wage rate through the following year, regardless of any wage increases obtained in the second year.

Finally, Seaway contractors bargained under the shadow of penalty clauses in their government contracts which, on the larger jobs, required them to pay the government from $2,000 to $5,000 for every day work extended beyond the completion date stipulated in their contracts. Although this penalty clause, which is rarely used in other types of construction, can be waived by the contracting agency, Seaway employers got the point when a high state official urgently reminded them in the middle of an important strike of their "contractual obligations."

II. *The Wage Structure*

It is evident that the American building-trades unions on the Seaway occupied a nearly impregnable bargaining position. Thousands of craftsmen had to be lured to a rural area; the low-wage Canadian labor market just across the St. Lawrence River was neatly sealed off; the product market was largely isolated from normal competitive pressures; and contractors had little incentive and even less ability to withstand union demands. It therefore appeared logical to predict that union building rates would increase substantially in the surrounding area and would soar even higher on the project itself.

As shown in Table 2, however, the actual wage structure was far dif-

[8] Although Seaway costs at the half-way point were running better than 10 per cent over original estimates, no one suggested that the project design should be altered to reduce these costs.

Table 2.—Union Wage Rates in Selected Trades and Areas, July 1956[a]

Trade	Heavy Construction		Building Construction				
	U.S. Seaway	State AGC[b]	Massena	Albany	Syracuse	N.Y.C.	U.S. Average
Bricklayer	$3.425		$3.50	$3.40 +11¢ W.F.	$3.425 +7½¢ W.F.	$4.05	$3.62
Carpenter	3.10	$3.05	3.025	3.025	3.045 +7½¢ W.F.	3.65	3.13
Cement finisher	3.425	3.35	3.50	3.40 +11¢ W.F.	3.075 +7½¢ W.F.	3.75	3.11
Electrician	3.35 +1% W.F.		{3.35 / 3.10[d]} +1% W.F.	3.45 +1% W.F.	3.50 +1% W.F.	3.50	3.34
Laborer	1.95 +7½¢ W.F.	1.95 +7½¢ W.F.	2.00 +7½¢ W.F.	2.27½ +7½¢ W.F.	2.275 +7½¢ W.F.	2.90	2.20
Operating engineer[c]	3.25	3.20 +7½¢ W.F.	3.30 +7½¢ W.F.	3.785 +7½¢ W.F.	3.425 +7½¢ W.F.	4.15	n.a.
Painter	2.60		{2.60 / 2.25[d]}	2.60	2.70	3.075	3.01
Plumber	3.35 +10¢ W.F.		{3.625 / 3.225[d]} +10¢ W.F.	3.00 +17¢ W.F.	3.155 +12½¢ W.F.	3.75	3.35
Structural-iron worker	3.40 +7½¢ W.F.		3.625 +7½¢ W.F.	3.375 +7½¢ W.F.	3.35 +7½¢ W.F.	4.15	3.30
Truck driver	1.95	1.95	2.10	2.25	1.90	2.75	2.20

[a] Employer contributions to welfare, pension, vacation, and apprenticeship funds are indicated by W.F. (Welfare Fund). This information is not available for N.Y. City and U.S. as a whole.

[b] Contracts covering heavy and highway construction in most of N.Y. state except Buffalo and N.Y. City. For contracts with differing wage zones, rate shown is for northern part of state.

[c] Heavy equipment classification.

[d] Double rates, with lower rate applying on small jobs as variously defined.

Sources: Seaway, AGC, and Massena rates from union contracts. Albany and Syracuse rates: *The Building Industry*, Aug. 1956. N.Y.C. and U.S. rates: Bur. Lab. Stat., *Union Wages and Hours: Building Trades, July 1, 1956*, Bull. No. 1205, Washington 1957; and *Union Wages and Hours: Motortruck Drivers and Helpers, July 1, 1956*. Bull. No. 1206. Washington 1957.

ferent: (1) although building rates did increase off the Seaway after 1954, area rates for several trades continued to lag behind both the national averages and the rates in other upstate cities; (2) yet, for seven of the ten trades, these moderate union rates off the Seaway were *higher* than rates on the project itself, while rates were equal in two of the other three trades.[4]

Because Massena is literally on the doorstep of the Seaway project, it has been substituted for Watertown in this table as a more graphic example of off-project building rates. For most trades, this substitution has no effect on rates, for they are identical in both cities. It is misleading for the plumbers, however, whose Watertown rates, comparable to those in Table 1, were $2.70 and $3.10 in 1956, with 52½¢ per hour added for travel to Massena. A comparison of Tables 1 and 2 thus reveals that most of the union building trades in northern New York had not appreciably altered their wage position, relative to other cities and their respective national averages, since the coming of the Seaway.[5]

The comparison between heavy-construction and building rates is more complex than it first appears. With few exceptions, overtime in building requires the payment of double time, but on the Seaway most trades receive only time-and-a-half. In addition, the Seaway contracts of the laborers, carpenters, cement finishers, teamsters, and operating engineers (until 1957) all contain carry-over clauses, while this is very rare in building contracts. Yet a third factor increasing the relative wage advantage of local building is the absence from project contracts of the travel pay clauses found in some local agreements.

There are further differences within the area of heavy construction. The state chapter of the Associated General Contractors (AGC) negotiates for heavy and highway work only with the five basic trades shown. Two of these trades, the laborers and teamsters, simply apply their AGC contracts to the Seaway, but the other three have in various ways negotiated separate rates which apply only to the project. Similarly, some of the specialty trades apply their local rates for "big work" to

[4] The Seaway rates can of course be termed "moderate" only in reference to the tight little world of the unionized construction industry; by many other standards, all the rates in Table 2 appear most immoderate. However, since this is an inquiry into a union rate structure, rather than investigation of union-nonunion differentials, the criteria employed in Table 2 appear the most pertinent. This is true even of the inflated country-wide average, which is actually restricted to union rates in fifty-two cities with a population of 100,000 or more.

[5] Exceptions are the electricians and plumbers, whose rates have moved up relatively as well as absolutely. See Note 2 for an explanation of the high Massena rates for cement finishers and ironworkers. Boilermaker Seaway rates are omitted from Table 2 because this trade has no local building rate for comparison.

the Seaway,[6] while yet others have a project rate different from their local rate.

Finally, to compound the confusion, both building and heavy-construction contracts apply on the Seaway, the one that applies in a particular case depending upon the type of work being done. This is a fairly straightforward distinction in many cases—a temporary building for housing equipment is allied to heavy construction and a permanent administration building is considered building construction—but which contract applies to a dam (heavy) which literally contains within it a powerhouse (building)? The answer: up to a certain point, determined by agreement, it's a dam and takes the heavy contract, but beyond that point the building contracts apply, illustrating the futility of the argument as to which type of construction requires greater worker skills (and pay).

Essentially, however, most Seaway work receives heavy rates (column 1 in Table 2), most work off the project receives building rates (column 3) and most building rates are higher than Seaway rates. Of the three exceptions, the electricians and painters simply apply their local "big work" scales to the Seaway, and only the carpenters maintained in 1956 a clearly higher rate on than off the project. Even this carpenters' differential is illusory upon closer examination, for the lower building rate for 1956 is the bargaining price paid by the union in return for an agreement by local contractors to drop an important arbitration case. In 1957, the carpenter's rate was identical ($3.20) on the Seaway and in local building, and the generalization can therefore be made that all Seaway rates are at best the same, and usually lower, than local building rates.

That this wage structure is not a temporary or local aberration is indicated by two facts. At the time of this study, three trades already had concluded Seaway agreements through 1959, and all contained modest annual increases of about 10 cents per hour, a figure which union officers were certain they would at least match in local building agreements. More important, it will be shown that available evidence points to the conclusion that rates on most large projects tend to be as relatively moderate as those on the Seaway.

III. *The Middleman Thesis*

In analyzing the extraordinary restraint displayed by Seaway union leaders in their wage demands, a fruitful point of departure is offered by Kerr's theory of the wage-setting process in organized craft markets.

[6] The double-rate structure is a device employed by some trades to meet nonunion competition by allowing lower rates on small jobs, defined in such terms as "residential work" or "service and/or repair work."

Kerr points out that in a casual labor market the demand for a given craft fluctuates constantly. If there is an oversupply of union craftsmen, some are unemployed, which is "politically uncomfortable" for the union leaders and may also weaken the membership's willingness to strike. Union leaders therefore attempt to adjust supply to demand by closely controlling the number of new members and, in the case of temporary shortages of union labor, by issuing work permits. Thus, "these unions do not generally use their control over the supply of labor to force up wage rates" but rather "to adjust supply to demand once the wage has been fixed" in response to both economic and non-economic considerations. "Control over supply is used more to preserve the integrity of the wage rate rather than to create it" [4, pp. 106-7].

Although Kerr's analysis provides very real insight into craft-union wage policies, it does not offer a wholly satisfactory explanation of union polices in bargaining situations such as the Seaway. Kerr appears to be concerned primarily with the typical craft market, in which a worker may be attached to an individual employer for only a few days or weeks at a time and in which an unpredictable "temporary shortage" of union labor may last at most for a few months. But a five-year project requiring thousands of men on a predictable schedule is obviously atypical in a casual labor market, and this difference is recognized on the Seaway by those unions willing to accept long-term contracts which apply only to that project and which do not contain many of the restrictive overtime and other provisions common to local building agreements. More important, Kerr's emphasis on the unpredictability of the actual wage rate to be found in a "Balkanized" labor market fails to explain why the Seaway wage pattern, by the testimony of every construction veteran interviewed, is typical of all such large projects.

Nevertheless, Kerr's theory, when supplemented by what shall be dubbed here "the middleman thesis," affords the most persuasive explanation of the union policy of wage restraint on large construction projects. The middleman thesis is best described by Christie in his brilliant history of the Carpenters' Union:

> The sum of the business agent's activities clearly established him as a labor contractor. He promised to deliver to the employer a certain number of carpenters possessed of a certain guaranteed degree of skill at a stated time for a stated wage. . . . In return he received the right to control fully the trade in a given community, to bargain for the wages and working conditions received by the men he supplied, and to replace the old speculator contractor and his pieceworking carpenters as a labor-contractor-middleman.
>
> Here, in the business agent's role as middleman, is the key to the conservatism of . . building trades unions in general. The building trades

> business agent is a more vital part of his industry than are local union officers in any other industry. . . . For the business agent is not alone an organizer of workers' discontent. He is also a middleman around whom the building industry is constructed. What his left or union hand may choose to do may greviously harm his right or middleman's hand. Thus while the business agent enjoys a position of strength which makes him the envy of many another local union officer, he also bears a burden of industrial responsibility which at times becomes crushing [2, pp. 65-66].[7]

Many of the controversial union rules and practices in this industry spring in some degree from the union's assumption of this obligation to provide workers to employers in a casual market, an obligation until recently encouraged by many contractors who, on the Seaway as in most of the organized sectors of the industry, blandly ignored the Taft-Hartley Act's ban on the closed shop.[8]

No one can argue that the business agent has never abused his power nor ignored his obligations, but the fact remains that he is acutely conscious of his role as a labor contractor. Thus, when questioned about the close relationship of building and heavy wage rates, almost none of the union leaders on the Seaway mentioned the usual union principle of equal pay for equal work or any similar concepts of equity, but several spoke strongly of their obligation to "protect" local contractors by keeping project rates in the neighborhood of local rates. In their words: "I have to man the local jobs, too."

The repeated emphasis on this obligation to supply labor to local employers is not the pose of "responsibility" sometimes adopted by union leaders attempting to put a good face upon a weak bargaining position. On the contrary, this obligation is based upon a clear recognition of, and desire to preserve, the foundation of the building union's considerable bargaining strength: control of the labor supply. Union officials are convinced that without such control they would be unable to establish any wage standards in a labor market characterized by a lack of worker attachment to individual employers and also subject to sharp seasonal and cyclical swings in activity. To maintain this vital control of the labor supply, however, construction unions must deliver on their part of the bargain by supplying contractors with the labor they re-

[7] Note that this concept of the business agent's quasimanagerial role is quite different from Ross's point that all union leaders are to some extent "in the middle" in trying to maintain the respect of both employers and members [7, pp. 108-9].

[8] Although it is generally agreed that this section of the act had little impact on the construction industry prior to 1958, this situation was radically altered by the decision of the National Labor Relations Board to apply the drastic "Brown-Olds remedy" to illegal hiring arrangements still in effect after November 1, 1958 [11, p. 22]; (the original deadline of June 1 was later extended by the Board). This decision has shaken the industry and has resulted in several changes in the form if not the substance of many hiring arrangements.

quire. As long as this labor contracting function is performed with reasonable efficiency, many contractors welcome the closed shop [1, pp. 45-46].

It therefore seems obvious to union leaders in this industry that their only realistic wage policy on projects such as the Seaway is one which will enable them to preserve their bargaining power in the long run by consistently attempting to fulfill their labor-contracting obligation to employers in the short run. Since local contractors have a limited ability to pay, union policy is to keep these employers competitive in the labor market by foregoing higher wage rates on the large projects.[9] Only in this way can the unions continue to furnish within reasonable limits the labor demanded by local employers of union labor. If this demand could not be met because of higher project rates, then the unions would have sacrificed their indispensable claim to exclusive control over the labor supply by failing to deliver when they were most needed. It is this contingency which leaders of building trades unions must avoid at nearly any cost, for once their efficiency as labor contractors is seriously questioned by employers, their power as union officials is simultaneously threatened.[10]

Of course, this professed desire to protect local contractors might be interpreted as a rationalization of the inevitable by leaders who know their members' sense of equity demands wage uniformity and realize that off-project wages are limited by nonunion competition. Such an interpretation, however, is based upon assumptions more appropriate for an industrial than a construction labor market. This is not a situation in which a relatively immobile factory worker can only complain to his union about the injustice of a higher rate being paid elsewhere for his job, for most construction workers in the area have little attachment to an individual contractor and would presumably experience no difficulty or compunctions about transferring to a five-year project paying well above local rates.

Although this supply-oriented thinking of union leaders may be welcomed by local union contractors, how do the middlemen satisfy their other "customers"—members who want high earnings and Seaway contractors who want thousands of skilled workers attracted into a low-wage area? The key, of course, lies in the availability of overtime work on the Seaway. Even though local union rates are low as compared

[9] Very high project rates could not easily be matched by local union contractors, for nonunion building continues to be undertaken in the local area—and even in Massena itself. In addition, of course, the demand for most local construction is considerably more elastic than is true of the project itself.

[10] It is significant that construction unionism is weakest in the single-family residential sector of the industry, where small operative home-builders do not feel the need for a closed shop and have strongly resisted it. See [1, pp. 46-47] and [8].

with union rates elsewhere, they are sufficiently high, when coupled with the opportunity for steady work and overtime premiums, to attract qualified workers from great distances. The job-scarcity consciousness of construction workers is legendary and so ingrained that jobs such as the Seaway appear to many of these workers as incredible bonanzas even when worked at prevailing local rates.

In this regard, the reaction of union leaders to temporary labor shortages on the Seaway is significant. When faced with contractors importuning them to find more workers, these union officials seldom make the obvious suggestion that contract rates are too low; instead, like the good businessmen they are, they almost invariably urge an increase in scheduled overtime. Should any unionist doubt the wisdom of this course, all he need do is look about him. In spite of temporary shortages in some trades, the project has been manned without great difficulty by the modest lure of only a forty-eight hour week at local rates. Meanwhile, union officers are resigned to hearing their phones ring at any hour of the day and night with calls from members across the country who are ready to hitch up their trailers and start rolling for the Seaway at a moment's notice.

This attitude explains other differences between local and project agreements. The double-time provisions common in building contracts, for instance, are clearly designed to spread a limited amount of work among union members, as exemplified by a local Carpenters' contract restricting the work week to forty hours "except in case of emergency." Consequently, overtime is rarely worked in local building even under boom conditions, while forty-eight hours is the normal work week on the project. The fact that most trades accept time-and-a-half for this overtime on the Seaway, and also in state AGC contracts for all heavy and highway work, reflects union awareness that the cherished "lump of labor" approach can safely be discarded in these situations. Similarly, the absence of travel-pay provisions in the Seaway contracts may illustrate an acceptance of the contractors' argument that on jobs such as this workers can legitimately be expected to shift their residence to the neighborhood of the job-site itself.

Fortunately for local contractors, there are many construction workers who are less mobile and less eager to work long hours than are the "boomers" who follow the big jobs from coast to coast. As long as the earnings differential on the project remains "reasonable," some local workers, particularly those outside the commuting range of the Seaway, will prefer not to move to Massena and will instead stay on local work, which is now plentiful, familiar, and paying good rates. Consequently, in the peak season of 1956, union officials were still able to man most of their local jobs. On the other hand, they were offering long hours and

high earnings on the project for those members who wanted them—not just the "boomers" and those from areas where building was slow, but also local workers who were unmarried or within commuting range, or those who simply desired the extra money enough to move to Massena and commute home weekends. With these and other groups, the middleman has met his third set of obligations by supplying the labor demanded by the Seaway contractors.

This picture of the construction union leader—"allowing" contractors this and "offering" workers that—may appear rather extreme, but Christie is correct in saying that in a sense the entire industry is built around this middleman. By the standards normally applied to union-mangement situations, his bargaining power on the the Seaway is nearly limitless. The primary reason this power remains largely unexploited is not because this union official is a good fellow or an industrial statesman, but because his other function as a labor supplier imposes obligations upon him at the same instant it creates his power as a labor leader. While these functions may not conflict in some situations, they do on the Seaway and only the hunger of many construction workers for steady overtime work enables the middleman to resolve his conflict of interest.

IV. *Alternative Explanations*

Although union wage policy on the Seaway is believed to be best explained in the above terms, it might legitimately be asked whether this wage policy could be better explained in the institutional terms made familiar by Ross and others. For instance, most of the rapidly spreading regional agreements in construction naturally are negotiated by representatives from the regional or international union level rather than by local business agents, and the unions' centralized bargaining strategy in this context is as clearly influenced by the "pressure of equitable comparison" as the policies of the CIO industrial unions often cited by Ross.[11] Since most of the Seaway contracts are also negotiated by international representatives, it is possible that these negotiators perceive "orbits of coercive comparison" extending far beyond the local labor market which dictate a policy of wage restraint.

While this possibility can not be ignored, no evidence to substantiate it was discovered in the course of extensive interviewing of union and management officials. This is patently a negative type of test but nevertheless the best available. By their very nature, most types of equitable comparisons influencing union wage policy are not abstruse mysteries known only to a select few, but are rather so obvious and pervasive that

[11] Compare Ross [7, pp. 55-56], with Bertram and Maisel [1, pp. 62-65], and Kenneth M. McCaffree [6].

union leaders dare not ignore them and indeed often flaunt them in rationalizing their decisions. It therefore seems significant that international representatives, in discussing the project contracts covering Seaway work, rarely mentioned the institutional forces which they freely acknowledged to be of paramount importance in the negotiation of regional agreements. Whereas regional contracts embrace the jurisdiction of many locals and generate all the usual pressures towards wage uniformity, such as the political need of the international to treat all locals alike and the ease with which a uniform contract can be administered, Seaway contracts typically involve the jurisdiction of only a single local of each union. International union officials stepped in on the Seaway primarily because the inexperienced local officers were not competent to handle the hiring and jurisdictional aspects of a project of this scope and novelty, rather than because of a concern for the impact of the project contracts on union locals outside the North Country.

However, the evidence is not completely one-sided. A few institutional factors were occasionally suggested as important wage influences by some contractor and union negotiators and these deserve a brief examination. For example, some emphasized the moderating influence on the five basic trades of their interest in organizing heavy and highway construction throughout the state. In this drive, highway construction, rather than the rare heavy job such as the Seaway, is the "bread and butter work" which must be controlled and, for various reasons, this control is easier to gain through regional than local bargaining. In New York, state-wide AGC contracts covering this type of work are of recent origin, are only binding upon about half of the AGC members in the state, and involve a considerable short-run sacrifice of union bargaining power in some local situations. Since two of these five trades simply apply their AGC contracts to the Seaway, it might therefore be true that their wage demands are tempered by the need for organizing the state as a whole. The fact remains that the carpenters easily obtained a five-cent differential in their AGC contract for Seaway work while the operating engineers, in the only major strike to occur on the Seaway, simply shattered their state agreement in so far as it applied to the project.[12] Finally, this concern with organizing highway work does not explain why the specialty trades, which are seldom used in this work

[12] The discipline and effectiveness of this strike clearly indicated the preponderant bargaining power enjoyed by the unions on the Seaway. This 1956 strike completely shut down the American half of the project. Although wage demands were involved, the critical issue was the union's demand that the carryover clause in the state contract be modified or abolished on the Seaway. The union quickly won this strike in seven days by splitting the contractors' front and signing a "supplemental agreement" with the Seaway contractors alone on terms even more favorable than the union at one point had offered to accept from the state AGC.

and do not have state contracts, nevertheless follow the same policy of wage restraint on the Seaway.

Consider two other assertions made by some union negotiators: if the Seaway contractors were pushed too hard in wage negotiations, they might retaliate by insisting that future jobs be operated under Taft-Hartley conditions; also, District 50 of the United Mine Workers, which has organized some construction workers in and about the coal country, was occasionally alleged to be a formidable rival capable of organizing even a project as large as the Seaway by offering contractors a relatively low wage scale and freedom from jurisdictional disputes. These "dangers" to the union as an institution appear not only remote but also quite irrelevant as explanations for a tradition of wage restraint which is believed to antedate the Taft-Hartley Act and is known to be observed on large projects even farther removed from the coal country than is the Seaway. Nevertheless, the fact that the Taft-Hartley Act was even occasionally conjured up as a potential threat in this securely closed-shop sector of the industry is another indication of the intense preoccupation of union officials with preserving their control over the labor supply.

On balance, there appears to be little ground for questioning the validity of the claim of union negotiators that the prime motivation of their wage policy on the Seaway is the desire to "protect local contractors," which in reality means protecting union control over the labor supply and thus preserving the ultimate basis of union bargaining power in the industry.

V. *Implications*

Available evidence, though scanty, supports the belief that union wage policy on the Seaway is typical of that followed on all unionized construction projects of a comparable size. It has been mentioned that every experienced government, management, and union official interviewed agreed on this point. The available wage data on Atomic Energy Commission projects also indicate that union rates were moderate on these sites and the rise in local construction rates less than had been anticipated [10, pp. 28-29, 47-51, 90] [9, pp. 1-10] [12, p. 26]. It is true that official AEC policy is to insist that prevailing area wages should constitute not only the minimum for project rates, in accordance with the Davis-Bacon Act, but should also constitute the maximum allowable rates.[18] However, the chief labor relations official of the AEC has pointed out that this limitation is more apparent than real; once an AEC project is underway, its rates *are* the prevailing rates in the area

[18] Kenneth M. McCaffree [5]. This is the best study of the sources of disputes in heavy construction.

and must be adjusted upwards during the several years that the project is under construction.[14] Finally, although BLS surveys distinguish between heavy-construction and building rates only for operating engineers, this rough measure reveals that engineers' building rates are as high or higher than their heavy rates in nearly every city that makes such a distinction [13, Table 13].

None of this is meant to imply that complete harmony reigns during wage negotiations on large projects. Disputes will doubtlessly continue to occur over the precise rates to be paid, the definition of the "locality," and particularly the extent to which local practices should be applied with respect to travel pay, shift differentials, carry-over clauses, etc. Given the power context in which these disputes often occur, however, the overriding impression remains that union wage policy on these projects is surprisingly restrained.

In evaluating the theoretical implications of this finding, Kerr's institutional analysis is of particular value in its emphasis on union control of the labor supply as the key factor in understanding the wage-setting process in an organized craft market. On the Seaway, for instance, it is certainly true that union control over supply was "used more to preserve the integrity of the wage rate rather than to create it." On the other hand, union wage policy in heavy construction suggests that Kerr underestimates the potency of market forces in shaping a craft union's wage decisions. The union business agent has maintained his impressive array of "middleman" functions not only through sheer power but also because he renders a service of value to employers in a casual labor market: the supplying of skilled labor when and where needed. Many employers are willing to pay for being relieved of this necessary and costly function, provided that the price is not excessive—that is, provided that union wages (and the cost of restrictive practices) do not depart so far from the structure and level of wages characteristic of a "free market" that it would clearly profit employers to do their own labor contracting.

Union leaders in heavy construction appear to be much more conscious of this market limitation than Kerr assumes. While the *level* of wages on the Seaway is probably higher than it would have been if this had been a nonunionized project, the extent of this difference can easily be overstated, for a relatively high wage scale would have been necessary in any event to attract thousands of skilled workers into that remote area. In addition, the *structure* of union rates on and off the project is strikingly similar to the wage structure that would have tended to prevail if both the local area and the project had been un-

[14] Interview with Mr. Oscar Smith, Director of the Organizaton and Personnel Division of the AEC.

organized, with a rough uniformity of rates throughout the labor market and an earnings differential on the project to compensate for the disutility of long hours and the need for workers to change residence.

As so often happens, this wage policy can be interpreted to fit the postulates of either the institutional or economic theories of union behavior. After the fact, the Seaway wage structure could easily be explained as the result of a union decision to forego short-run economic advantages for the long-run benefit of the institution; with equal logic, the wage structure could be described as the result of a purely economic and politically unpopular decision by union leaders in their managerial roles as labor contractors. Regardless of the label that might be attached, the essential point remains that if the conclusions of this study are valid, union behavior in a casual labor market is seen to contain an important element of restraint even when tested "at the margin" in an unusually monopolistic setting. Thus, the foundation of the considerable bargaining power often enjoyed by craft unions—exclusive control of the labor supply function—contains within itself a countervailing obligation to man all union jobs which at least partially precludes the abuse of that bargaining power.

This determination of craft unions to protect their labor-contracting function at nearly any cost also underlines the grave implications of the recent decision by the National Labor Relations Board to make an all-out assault upon the closed shop in the building industry.[15] There is no doubt that the closed shop in its usual form can be justifiably attacked for concentrating too much power in the hands of union business agents. Nevertheless, as shown by this and nearly every other study of labor relations in the building trades, *some* form of union participation in the hiring process appears both inevitable and on many counts desirable in a casual labor market. Policymakers, no less than theorists, must recognize the implications of the "Balkanization of labor markets."

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THE U.S. NATIONAL ACCOUNTS AND THEIR DEVELOPMENT

A Review Article

By RICHARD RUGGLES*

In 1947, the Department of Commerce set forth for the first time the whole body of U.S. national income statistics in an interrelated and consistent system of national income accounting. There had, prior to this time, been a considerable evolution in the national income and product statistics themselves, and there had been beginnings both in the United States and the United Kingdom which pointed to the development of formalized national economic accounting systems. The task of mobilizing resources for war production had stimulated work in this area, and the formulation of the Keynesian theory in macroeconomic models provided a source of additional stimulation. Nevertheless, in the United States the data had not been made available in the form of an integrated system until the 1947 National Income Supplement to the *Survey of Current Business* was published [8]. In 1951 a new supplement [6] provided for the first time a detailed discussion of the conceptual framework and the statistical sources and methods underlying U.S. national income statistics. Also in this supplement, estimates of constant dollar gross national product for the period 1929 to 1950 were presented for the first time. In 1954 a third supplement [7] further revised the statistical data presented in the 1951 edition and amplified the discussion of sources and methods on which the estimates were based.

Besides these basic publications, there have appeared from time to time additional supplements to the *Survey of Current Business* on particular aspects. For example, considerable information on regional income is embodied in the report on regional trends in the United States economy [9] published in 1951. Information on income distribution was provided by a supplement [4] published in 1953; and in the same year a comprehensive study of the income of Hawaii [5] was also published.

In view of these developments, the Conference on Research in Income and Wealth decided to devote its 1955 session to a critique of the United States income and product accounts. This critique was not done casually. Over 20 people either presented papers or provided formal comments. These papers and comments have been published as Volume 22 of Studies in Income and Wealth, entitled *A Critique of the United States Income and Product Accounts* [1]. In planning this conference it was recognized that the Department

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of Commerce would have to cooperate in making a searching critique possible, and there is no possible complaint on this score. George Jaszi, as chief of the National Income Division of the Department of Commerce, provided the central paper of the conference, on the conceptual basis of the national income accounts. In addition he proved an appendix to his paper which reviewed the literature of national income accounts. Although Jaszi is careful to state that the views he expresses are his own, his paper provides a reasoned statement of the rationale underlying the Department of Commerce position on most of the controversial issues. As such, this paper is an extremely valuable addition to the literature. In terms of actual space, Jaszi's paper, together with his comments on other papers (and he comments on every paper in the volume) account for more than one-third of the book.

It is neither possible nor desirable to discuss here all the points covered in this volume; the latter will find its place in the literature not as a bedside book for restful reading but rather as a reference book for people working on some specific aspect of aggregative economic concepts. Nevertheless, certain topics do stand out, because of their importance and because of the amount of attention they receive in this volume; and an examination of some of these will serve as a basis for evaulating this critique of United States income and product accounts. Six major topics will be discussed, because they either were or should have been major objects of attention: the design of accounts, factor cost valuation, the evaluation of intermediate services, distributive shares, capital formation, and deflation.

The Design of Accounts

In my view, the most important subject discussed in the volume is the design of the national income accounting system. This design is undoubtedly now undergoing a significant evolution and promises to show marked progress in the near future. The discussions by Jaszi, Schelling, Copeland and Lusher are very suggestive.

In his discussion of the design of the accounts, Jaszi recommends a reform of the United States summary accounts which would involve dropping the business-sector account and the corresponding income and product subtotals now included in the personal, government and rest-of-the-world accounts. He advocates this simplification in the belief that the information which would be lost is not very important. The result would be a simple five-account system: a national income and product account, a personal income account, a government receipts and expenditure account, a savings and investment account, and an international transactions account. Such a system would be articulated in the sense that every transaction appearing in it can be identified twice, once as a debit and once as a credit. Jaszi recognizes that such a system will not comprehend all of the information contained in the national income statistics. For example, the industry distribution of output and payments would not appear in the summary accounts. However, one can view such industry detail as a deconsolidation of the totals shown in the national income and product account. Similarly, the activities of various kinds of legal organization are not shown. Supplementary tables containing data of this type again

would have to be shown separately. The accounts, it should be accented, can show only summary information for the economy as a whole. Jaszi suggests as an additional supplementary table that the personal income account be broken down by income size, and that, to the extent that it is possible, cross classifications by economic group and income size be developed. The savings and investment account, he suggests, should be deconsolidated to integrate financial information with income and product data. Despite the contrary opinions voiced by experts in flow-of-funds analysis, he regards a deconsolidation of the savings and investment account as a perfectly adequate vehicle for achieving integration between the flow-of-funds and national income accounts. In discussing the integration of the national income and flow-of-funds data that has been achieved within the accounting framework developed by Copeland and the Board of Governors of the Federal Reserve System, Jaszi deplores the submersion of the national income and product categories to the money-flows categories. He would prefer an arrangement in which the income and product framework would stand out, with financial data brought in only in supplementary form.

Much the same sort of point relating to the relationship between the summary accounts and the supplementary tables was made by several other contributors. David Lusher, for instance, suggests that care should be exercised to avoid overloading the accounts with too much information; instead, additional information should be supplied in supplementary special accounts oriented toward and coordinated with a central summary set of accounts. Once the idea of an integrated system of general and special accounts is accepted, he thinks that there would be more tolerance for different conceptual formulations, which in most cases are meant to serve different purposes. Morris Copeland also emphasizes the need for a revised set of summary accounts which would provide financial information. His solution is closer to the United Nations standardized national accounts [3]. Unlike the deconsolidation of the saving and investment account suggested by Jaszi, which would provide information on changes in assets and liabilities by sector, the accounts recommended by Copeland require relatively little new empirical information. The change would make the present information more useful by organizing it better, but it has serious drawbacks for the future development of the accounts. In particular, Copeland's accounts would not provide the additional information required to take the next logical step in integrating the accounts, that of developing balance sheets as an integral part of the national accounts, as Raymond Goldsmith has suggested.

Some of the shortcomings of the present form of the accounts were pointed out by Thomas Schelling. In particular, he suggests that a number of the tables in the present system are essentially reconciliation tables designed to show nothing more than that certain selections of items do balance. Such tables often result in rather uninteresting classifications. He says, for example, that in an informal poll he has yet to find a single person who could think of any possible interest in the breakdown of figures in the present rest-of-the-world account. Much the same criticism can also be leveled at the saving and investment account in its present form.

The National Accounts Review Committee[1] made considerable use of the material on the design of accounts in the mimeographed preliminary version of this volume. On the basis of this and other materials, the Committee recommended that a conceptually integrated system of national economic accounts, covering flow-of-funds accounts, input-output tables, balance-of-payments accounts, and national balance sheets, should be developed. The five-account system advocated by Jaszi for the income and product core of the system was endorsed. Schelling's suggestions relating to the redesign of the internal classifications in the accounts to provide more meaningful data, including especially the matter of showing the rest-of-the-world account in gross form, were also taken into account. The integration of both flow-of-funds data and national balance sheets into the accounting system, as suggested by Copeland and Goldsmith, was also recommended, but in addition the committee proposed to integrate the industrial breakdown and input-output data as component parts of the system. The form adopted followed Lusher's suggestion that the summary accounts be kept simple and supplementary information shown as deconsolidations of the information provided in the summary accounts.

At the present time the desirability of working toward integrated national economic accounts is widely recognized. Both the Department of Commerce and the Board of Governors of the Federal Reserve System are concerning themselves with different aspects of this problem. Governments in other countries are also pursuing the matter, and the United Nations is working on the development of integrated economic accounts that will fit with their standardized national income accounts.

Factor Cost

The familiar controversy concerning factor cost was covered in considerable detail. Jaszi, in his basic paper, gives a reasoned statement of the objective of factor-cost measurement and its limitations, and discusses in these terms the problems of government interest, taxes and subsidies, etc. In his appendix Jaszi comments on Kuhn's criticism of the factor-cost concept and points out that the Department of Commerce has always considered the term factor-cost to be completely interchangeable with factor income or factor return.

Raymond Bowman and Richard Easterlin, however, view the factor-cost problem differently. To them it is one of deriving a correct measure of the magnitude of the end-product aggregate and showing how this aggregate changes over time. They argue that one of the most important virtues of the national income statistics is that they are centered about a basic notion of the of the end product of the economy which can be reduced to a single measurable total. This conceptual cornerstone of national income needs to be strong enough to support analyses which can range over different times and institutional arrangements and yet remain pertinent to the conditions of the moment.

[1] This committee was set up by the National Bureau at the request of the Bureau of the Budget in 1956 to review the state of the national economic accounts of the United States. Their report was submitted to the Subcommittee on Economic Statistics of the Joint Economic Committee in 1957. It appears in the Hearings before this committee, October 1957, and was also reprinted by the National Bureau [2].

With this as a point of departure, Bowman and Easterlin then examine critically each element which goes into the aggregate.

One may seriously question this Bowman-Easterlin approach to the building of the national economic accounts. It is true that in the history of the evolution of national income accounting the initial focus was on certain aggregates designed to measure welfare. In their earliest forms the national income measurements were not based upon any concept of a network of interrelated accounts. Rather, it was recognized that the same aggregates could be built up by using different kinds of information to arrive at the same total, since transactions were recorded from several points of view in the economic system. With the development of income analysis and the problems raised by the war mobilization of the 1940's, nations became more interested in studying the network of income and product flows in the economy and their repercussions upon prices, output and employment. The simple aggregate of national income at factor cost was not very useful for this analysis, no matter how highly refined. Instead, sector accounts were developed showing the income and expenditures of different parts of the economy and the interrelation of sectors to one another. The suggestion that national income accounts today revert to a concern with aggregates, and that we attempt to concentrate our efforts on a more refined measurement of welfare, in my view, misses the significance of the developments over the last 15 years. Measurement of welfare is an interesting and useful exercise, but it is the sort of task which is more properly pursued as a special research project rather than something which can be turned out as current data through formalized collection procedures. Finally, the impact of institutional factors such as increased economic security or restriction of individual freedom also has a bearing upon economic welfare; national income measurements which reflect the cost of such factors but do not adequately take into account the factors themselves may be quite invalid as measures of welfare. In many of the controversies over measurement of national income at factor cost, discussion has centered upon matters which are at best refinements of concepts which themselves are still very fuzzy indeed. It is as if a college registrar were to send around to the instructors a request that students' grades be reported not merely in percentage points, but in four places instead of the usual two, so that his records could be more accurate. If accuracy is the objective in the measurement of welfare it might be better to spend any available additional resources on obtaining other kinds of additional information rather than on refining and reprocessing existing data.

Evaluation of Intermediate Services

The controversy over government duplication in many ways resembles the controversy over factor cost. For many people the question of government duplication in the national accounts is a matter of concern because it leads to an incorrect welfare measurement. Their argument is that much of what the government does results in intermediate rather than final product, so that the amount of final product produced in the economy is overstated. Jaszi points out that the same principle can be applied to the consumer; much of one's

cost of living is taken up with costs of providing productive services rather than benefits in the form of pure consumption. It is true that if one's object is to measure welfare, both the government duplication and the costs borne by consumers should be taken into account. This again, however, is the very fuzzy concept, which can only be quantified in terms of a subjective evaluation of what constitutes consumption and what constitutes intermediate goods. When an appropriation request comes before Congress, one can be sure that different Congressmen judge it on quite different grounds; and if these judgments were used as a basis for determining whether the appropriation was for an intermediate product or public consumption, the answer would be quite different depending on which judgments were accepted. The problem of separating intermediate products from public consumption seems to me similar to the suggestion made by a government economist from one of the least developed countries, who suggested that the total budget should be classified into two categories: inefficient and unnecessary expenditures, and efficient and necessary expenditures. When he made this suggestion it did occur to me to ask why it should not be a fourfold classification, but he hastily assured me that it would be too difficult to make all four estimates with precision.

Budd and Hagan go further and suggest that quite aside from the government duplication problem there is also a problem of omission: particular components which are now considered intermediate products might well be brought into the final-product category. Specifically, they suggest that radio and television broadcasting be considered a final product and imputed much in the same manner as the product of financial intermediaries is now imputed. A similar suggestion also might be made with respect to research and development expenditures made by business, which do contribute substantially to economic growth even though they are written off as an intermediate expense.[2]

Even aside from the objective of obtaining a valid measure of final output in welfare terms, there is considerable merit in the suggestion that such activities as these be included in the estimates of the Department of Commerce. The addition of useful and meaningful information to the national accounts provides more information for analysis. Series on radio and television output and research and development expenditures would be extremely useful for many analytical problems. Although such information may be available outside the national income accounting framework, it would gain considerably by being made an integral part of that framework so that it could be used in conjunction with other parts of the national income accounting data. Thus, for example, it would be interesting to explore the relationship of research and development expenditures to expenditures by producers on plant and equipment to see how these series vary during periods of recession and boom. Data on radio and television broadcasting output might be usefully related to such things as the output of theatres and the expenditures which consumers make on radio and television receivers. For these reasons I believe that the omission

[2] Businesses also provide many consumption goods and services for their employees, such as recreation facilities, cafeteria meals at subsidized prices and expense allowances which provide for meals and entertainment. Many of these might correctly be considered consumption rather than intermediate business product.

of useful information from the national accounting framework is a far more important matter than the suggestion that certain information should be eliminated or that existing information should be reclassified for reasons based on particular subjective welfare assumptions.

Distributive Shares

One of the major problems relating to data on distributive shares is that of determining how far to go in attempting to provide functional classifications. Edward Budd recognizes that as a practical matter the Department of Commerce will not be able to go very far in providing actual estimates according to the functional nature of distributive shares. But he suggests kinds of information which could be provided that would do much to enable analysts to make their own estimates of distributive shares by functional categories. Budd also emphasizes the desirability of classifications of income shares on bases other than function. Institutional or legal distinctions are also very important for many purposes and these are certainly easier to approximate statistically. He also points out that for a great many problems the omission of capital gains and losses from the accounts is indeed unfortunate. The relative welfare of various classes or groups cannot be assessed realistically by considering only gains accruing from production as measured by national income.

One of the weakest components of the distributive shares data is entrepreneurial income. Stanley Lebergott provides considerable insight into the empirical adequacy of the estimates of entrepreneurial income in his discussion. Despite the shakiness of the entrepreneurial income estimates, Lebergott feels that it would be hard to imagine any improvement from further manipulation of data; the limit has about been reached. He is, on the other hand, optimistic about possibilities for improvements in the basic data. He suggests, for instance, that improvement in corporate trade statistics might well be used to improve trade estimates for unincorporated enterprises. But the fact that Congress for three years in a row decided against the improvement of corporate trade statistics has made him somewhat pessimistic about future developments.

Capital Formation

The problem of estimating capital formation is touched upon in a number of the essays. Eric Schiff considers business plant and equipment and Budd and Hagan devote considerable attention to domestic capital formation as a component of final product. However, the problem of how broad the concept of capital should be is not really discussed, and this is a serious omission. It has already been suggested that expenditures on research and development might well be brought into a broader concept of capital. Another category which might usefully be included is expenditure on repairs and upkeep. Such expenditure does affect the condition of the capital stock, and it does vary from year to year according to business conditions. In good years when profits and taxes are high, businessmen will tend to spend considerable amounts on maintaining plant and equipment in order to reduce taxes and to show a smaller apparent profit. Conversely, when output and profits fall, businessmen

cost of living is taken up with costs of providing productive services rather than benefits in the form of pure consumption. It is true that if one's object is to measure welfare, both the government duplication and the costs borne by consumers should be taken into account. This again, however, is the very fuzzy concept, which can only be quantified in terms of a subjective evaluation of what constitutes consumption and what constitutes intermediate goods. When an appropriation request comes before Congress, one can be sure that different Congressmen judge it on quite different grounds; and if these judgments were used as a basis for determining whether the appropriation was for an intermediate product or public consumption, the answer would be quite different depending on which judgments were accepted. The problem of separating intermediate products from public consumption seems to me similar to the suggestion made by a government economist from one of the least developed countries, who suggested that the total budget should be classified into two categories: inefficient and unnecessary expenditures, and efficient and necessary expenditures. When he made this suggestion it did occur to me to ask why it should not be a fourfold classification, but he hastily assured me that it would be too difficult to make all four estimates with precision.

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Distributive Shares

One of the major problems relating to data on distributive shares is that of determining how far to go in attempting to provide functional classifications. Edward Budd recognizes that as a practical matter the Department of Commerce will not be able to go very far in providing actual estimates according to the functional nature of distributive shares. But he suggests kinds of information which could be provided that would do much to enable analysts to make their own estimates of distributive shares by functional categories. Budd also emphasizes the desirability of classifications of income shares on bases other than function. Institutional or legal distinctions are also very important for many purposes and these are certainly easier to approximate statistically. He also points out that for a great many problems the omission of capital gains and losses from the accounts is indeed unfortunate. The relative welfare of various classes or groups cannot be assessed realistically by considering only gains accruing from production as measured by national income.

One of the weakest components of the distributive shares data is entrepreneurial income. Stanley Lebergott provides considerable insight into the empirical adequacy of the estimates of entrepreneurial income in his discussion. Despite the shakiness of the entrepreneurial income estimates, Lebergott feels that it would be hard to imagine any improvement from further manipulation of data; the limit has about been reached. He is, on the other hand, optimistic about possibilities for improvements in the basic data. He suggests, for instance, that improvement in corporate trade statistics might well be used to improve trade estimates for unincorporated enterprises. But the fact that Congress for three years in a row decided against the improvement of corporate trade statistics has made him somewhat pessimistic about future developments.

Capital Formation

The problem of estimating capital formation is touched upon in a number of the essays. Eric Schiff considers business plant and equipment and Budd and Hagan devote considerable attention to domestic capital formation as a component of final product. However, the problem of how broad the concept of capital should be is not really discussed, and this is a serious omission. It has already been suggested that expenditures on research and development might well be brought into a broader concept of capital. Another category which might usefully be included is expenditure on repairs and upkeep. Such expenditure does affect the condition of the capital stock, and it does vary from year to year according to business conditions. In good years when profits and taxes are high, businessmen will tend to spend considerable amounts on maintaining plant and equipment in order to reduce taxes and to show a smaller apparent profit. Conversely, when output and profits fall, businessmen

tend to postpone repairs and upkeep because they feel they cannot afford them. For pleasing stockholders, such compensatory behavior on the part of corporation officials may not be entirely irrational; and by not recognizing repairs and upkeep as a part of gross capital formation, the U.S. national accounts omit information which would be very useful in understanding the fluctuations in economic activity.

The problem of the treatment of government capital formation raises issues that are quite different from those of research and development and repairs and maintenance. In the case of expenditures made by the government, the problem is one of classification: whether an item should be changed from current government expenditure on goods and services to capital expenditure. Many of the problems which arise have already been mentioned in connection with the division of government expenditures on goods and services into intermediate and final products. If a government capital account were set up, there would undoubtedly be a tendency to classify government expenditures on items made of concrete, wood and steel as capital expenditures, and expenditures on services of all sorts as current expenditures. From the point of view of its influence on appropriations, such a procedure might be very harmful. There can be little doubt that additional expenditure on such things as education and public health may provide future benefits for the economy of even greater magnitude than equal expenditures on roads or buildings, and a restriction of the concept of capital to physical rather than economic capital might well be a disservice to intelligent policy planning.

On the other hand, some additional government operations should perhaps be classified as government enterprises, so that plant or machinery used in these operations would be classified as producers' plant and equipment. Thus it is reasonable that government buildings be considered capital just as private buildings built for government use and leased to the government are. Whether a building is built on a lease-back arrangement or directly by government funds should not make a difference in its treatment in the national accounts. Certain other forms of expenditures on construction and equipment, however, are less obviously producers' capital goods. Thus highways, although durable and giving services in future periods, are more analogous to other free goods provided by the government such as education and health.

All in all, reclassification as capital expenditure of items which now appear as current expenditure is less crucial, and in many cases would provide less meaningful data, than would inclusion of information which at present is omitted entirely from the accounts. It would be useful, of course, for the Department of Commerce to provide information that would permit the analyst himself to reclassify government expenditures according to whatever concept of capital he wants to employ for a particular problem.

Deflation

Measurement of real product is one of the thorniest problems with which the national accounts must deal. Approaching this problem, one can sympathize with the person who suggested that simplification of the law would be considerably enhanced if there were introduced simply a single law making all

crime illegal. How much simpler our deflation problem would be if we could reduce it purely to the problem of measuring how much prices change from one period to another. John Kendrick's discussion provides a very clear picture of how price deflation is applied generally by the Department of Commerce. Kendrick indicates that since the Department of Commerce must depend on price indexes collected by other organizations, the validity of the deflators is conditioned in the first instance by the degree to which these indexes reflect average price movements over the country for the complex of products and product families they are supposed to represent. The components of the Bureau of Labor Statistics consumer price and wholesale price indexes are the major source of Department of Commerce deflators. Kendrick feels that these basic price indexes have been carefully constructed, particularly in more recent years.

Nevertheless, one can and should raise a serious question as to the applicability of these price indexes for use as deflators in the national accounts. Generally speaking, prices are obtained for commodities of fixed specifications. In fact, however, new items continually appear on the market and old items change in quality. When improvements in quality cannot be measured or new products appear which are more desirable than those they replace, price indexes, which must leave these factors out of account, will overstate prices in the following period. In pricing consumer goods, the Bureau of Labor Statistics does attempt to take into account those changes in the nature of the product that result in an upward change in price, but improvements in quality may also occur at no increase in cost so that the consumer gets more value for his money. In such cases, no adjustment is made in prices and the price indexes do not reflect the quality improvements. Thus, for example, according to the implicit price deflator in the national income statistics, the prices of consumer durables rose by 15 per cent in the decade between 1947 and 1957. Yet it is not entirely clear that this really was so. Suppose, for example, that an individual were given $1,000 to spend on consumer durables, together with mail order catalogs for 1947 and 1957, and told that he could order from either catalog but not both, but that prices in the 1947 catalog were 15 per cent cheaper. It is somewhat questionable whether everyone would prefer to buy from the 1947 catalog, because of the many things missing from it that were available in 1957. A choice of the 1957 catalog would seem to indicate that $1,000 spent on consumer durable goods in 1957 would in fact give more real utility than the similar money expenditure in 1947, despite the movement of the nominal price index.

The measurement of consumer services is equally difficult. Generally speaking, the compensation of the person performing the service is taken as the indicator of price. Thus the cost of domestic servants, of haircuts, and of professional services all are generally measured by this criterion. It is obvious, however, that the quality of services may improve. Thus, for example, medical service is better than it used to be, but this is not taken into account. Similarly, quality changes in such services as housing and education cannot be measured. It is a serious error, as a moment's reflection will indicate, to assume that if teachers do not improve, education as a product does not improve

over the years. We have only to ask ourselves whether we would be content to give children today exactly the same education as was given 50 years ago, using the same books and the same fund of knowledge. Education, like other products, is a combination of factors of production, and should not be assessed only in terms of an intuitive judgment about the contribution of any one of these factors of production.

Nor are consumers' goods and services the only area that presents pricing problems. For producers' durable goods, it is well recognized that equipment produced today is far more productive than that produced even five years ago, but such increases in efficiency are extremely difficult to take into account in price indexes. In terms of the ability of capital goods to yield productive services, there can be little doubt that the increase from year to year is substantial. But price indexes of producers' durable equipment generally reflect changes in costs of production, rather than changes in the performance of the equipment itself. Residential and commercial construction also pose problems. Again, price indexes are constructed by determining what a structure of standard specifications would cost. Improvements in design and cost-reducing changes in specifications are not taken into account in the price comparison, so that the price index tends to have an upward bias.

Finally, the pricing of goods and services purchased by government is very difficult. For military equipment, it is often impossible to determine what happens to prices when design changes radically. For the services of government employees, like services in general, it is assumed that there is no change in efficiency or output per man, so that all increases in salary are, in effect, increases in the price of government gross product. By this measure, the price of government services as measured by the pay of government employees has risen by an average of over 4 per cent a year since 1946. There is good reason to believe, however, that the productivity of government workers has increased substantially in this period. For one thing, the introduction of data handling machines and computers speeds up the operations of many stages of government work. Statistics in the government are now in large part handled mechanically rather than by clerks. The mechanization which is so characteristic of current developments elsewhere is also occurring in government.

There is thus an upward bias in the price indexes for almost every category of expenditure. For commodities it exists because quality changes and the introduction of new products cannot be integrated adequately into the price data. For services it exists because by and large the value of services is assumed not to increase, although there is strong evidence that it does. I do not mean to suggest that economists in general or the Department of Commerce in particular have not done their homework in so far as deflation is concerned. Nevertheless we all may be guilty of placing too much reliance on what is at best a very imperfect measurement.

These characteristics of price indexes become very important in circumstances where those concerned with economic policy take these indexes too seriously. A tight money policy may go into effect at the quiver of a decimal point, so that because of our statistical inadequacies we may condemn a nation to a rate of growth which is lower that it could otherwise achieve. In many

ways it is unfortunate that this conference did not concern itself with the policy implications of using the existing national accounts framework, rather than with matters of greater academic refinement such as factor cost and duplication in government services. There can be little doubt that policy-makers concerned with insuring economic stability must rely heavily upon information derived from national accounts. And national accountants in turn bear a moral responsibility for laying bare the frailties as well as the potential usefulness of their information.

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THE ECONOMIC EVALUATION OF FEDERAL WATER RESOURCE DEVELOPMENT

A Review Article

By JULIUS MARGOLIS*

". . . previous to any law being made to raise a tax, the purpose for which it is to be raised ought to appear evident to the legislature to be of more service to the community than the money would be if not collected" (Constitution of Vermont, Chapter 1, Article 9).

In the same spirit as the Vermont constitution, the federal Flood Control Act of 1936 adopted a welfare-economic criterion for public services by stating that the federal government should sponsor flood control projects ". . . if the benefits to whomsoever they may accrue are in excess of the estimated costs. . . ." Through practice or legislation this economic-feasibility criterion has been extended to almost all water projects. The appropriate concepts and measurements for the benefits and costs have been the subject of Congressional and administrative discussions for many years. Though the debate about the benefit-cost ratios has centered around federal water resources, their use has been adopted by other governments and in the case of other public services such as highways, sanitation, etc. Undoubtedly the popularity of benefit-cost ratios will increase as governments grow in size with a consequent desire to increase their efficiency.

The objective of the three volumes under review[1] is to suggest procedures by which to evaluate the efficiency of water resources development projects. They do not restrict themselves to the modest test suggested by the Vermont constitution or to the legislative restriction which requires that the benefit-cost ratios computed by the agencies should be at least one for the project to qualify as economically feasible. Rather, the objective is to analyze projects so that the chosen set of projects will maximize national welfare—a far more ambitious task. Though this objective clearly exceeds legislative requirements, it does not violate the analytical tradition which has developed around these ratios. Differences among the ratios for projects have been used as arguments

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[1] Otto Eckstein, *Water-Resource Development: The Economics of Project Evaluation*, a revised Ph.D. thesis, Cambridge: Harvard Univ. Press, 1958. Pp. xiii, 300. $6.50; J. V. Krutilla and Otto Eckstein, *Multiple Purpose River Development: Studies in Applied Economic Analysis*, a Resources for the Future research study, Baltimore: Johns Hopkins Press, 1958. Pp. xiv, 301. $4.50; R. N. McKean, *Efficiency in Government Through Systems Analysis with Emphasis on Water Resources Development*, a RAND Corporation research study, New York: John Wiley, 1958. Pp. x, 336. $8.00.

to establish priorities among acceptable projects. In the agencies and in Congress it is assumed that it is best for the national welfare to choose the set of projects with the highest benefit-cost ratios, when other differences are unimportant.

The volumes are a significant contribution to the neglected field of applied welfare economics. They explicitly accept the conceptual developments in theoretical welfare economics, and then in a creative manner examine the possibilities of application to actual public projects. This review is critical of some of their suggested treatments, but these criticisms should not be taken to reflect on the quality of the work, which recommends the volumes to anyone interested in welfare economics, public finance or resource development. The application of welfare concepts to a public service is pioneering work and there are many unresolved issues.

Though all three volumes are principally concerned with the efficiency analysis of water resources development, their structure and emphasis differ. Eckstein and Krutilla-Eckstein present a capsule model of the perfectly competitive economy to establish the role of efficiency criteria, the welfare implications of prices, and the need for government actions. Although McKean makes the same points, his framework of efficiency analysis is to pose directly the problem of a government trying to improve its decisions. Though both approaches converge on the same issues, the introductory chapters complement each other in stressing the different levels of approach.

McKean's emphasis is on the conceptual problems of criteria, and the evaluation of benefits and costs. The problems are treated first in a general way with illustrations for firms and the military, and then are gone over again with specific applications to public water resources development. The treatment is very careful and precise though not formal. The general analysis is then further explained with references to two cases studies. A final part, appended to the study deals with the more general questions of performance budgeting by the government and a survey of possible opportunities for efficiency analysis in all sectors of the federal government. Beyond the value of the book for water resources analysis his discussion of the problems of best decisions is outstanding. Its sophisticated treatment of the necessity of doing the second-best and its attendant pitfalls will be of value to any decision-maker.

Eckstein is less elaborate in his direct discussion of conceptual and measurement problems. Much of his most interesting material is contained in four chapters dealing respectively with the functions of the multifunction water projects: flood control, navigation, irrigation, electric power. Each of the chapters summarizes current procedures in regard to economic and financial analysis, evaluates them and proposes improvements.

Krutilla-Eckstein complement the above volumes in the following respects. There is a more elaborate statement of the problem of interdependencies and indivisibilities. A lengthy digression on federal financing attempts to estimate the social cost of capital raised by federal taxation. Most important is the different orientation of the volume. Whereas the other volumes ignore organizational structure, it is a central problem in Krutilla-Eckstein. Problems of partnership or purely private development are examined so that we may gain a somewhat clearer understanding of why government operates in this area.

Goal and Measurement

Valuation in economics is measured in terms of the results of behavior. There is no theory which enables us to estimate directly the value of goods, yet this is what we are asked to do in the case of the product of government. The only market that exists for most government products is a political process. Can we measure the value of the government product in terms of the results of the behavior of government? Can we infer from the behavior of government the preferences of individuals? An analysis along this line would be symmetrical to the treatment of the measurement of value in the private sector. Instead the authors, like the government agencies, have sought to estimate directly the value of the government product by asking what is the price individuals would pay if there were a market. Since the products which could be sold are either distributed free or priced at cost or below, a difficult imputation problem exists.

In addition to these products to which monetary values can be assigned, there is a set of products which enter into the individual valuations but for which no market price is available. These are referred to as intangible benefits. All three authors concentrate heavily on the tangible benefits; and though they recognize the reality of the intangibles, they have very little to say about them. The intangibles are poorly named. They are not elusive, just difficult to add into a sum along with bushels of corn and gallons of water. Intangibles include items like lives saved in floods, municipal decentralization, regional growth, and recreational use. The benefit-cost ratios concern only tangibles. Intangibles are discussed in supplementary documents. It is up to the Congress or the Budget Bureau to search their collective or their constituents' utility functions to decide among projects with different combinations of tangible and intangible benefits and costs.

There are four classes of tangible benefits. Their definition is relatively clear but their measurement remains poor. (1) Irrigation benefits are valued at the increase in farm income which could be attributed to the water. Over the years the benefits have been greatly overestimated. This is illustrated by the fact that the estimated benefits usually exceed the prices the farmers are asked to pay for the water and yet most irrigation projects have been unable to maintain their very low schedule of payments. (2) Flood control benefits are the mathematically expected losses averted because of the project. Eckstein cites a case of a small agricultural area where the Department of Agriculture and the Corps of Engineers estimated flood control benefits. Using essentially the same concepts of benefits and costs the Corps estimated $6,000 per year while the Soil Conservation Service estimated $38,000. (3) The navigation benefits are the differences between the costs of shipping by water and those by the cheapest alternative. Eckstein points out that the cheapest alternative is usually rail and its costs are estimated at the rates charged rather than by marginal costs. If marginal costs were considered, benefits would be reduced by 15 to 40 per cent. (4) Power benefits are the costs of generation of equivalent power by a private steam power plant. This is overinflated by including in the private alternative the costs of taxes, higher interest rates, and by not allowing for the productivity gains in the new steam plant which would

replace the present one in 30 years, while the old hydro system would remain. All of the tangible benefits are summed to provide a single number, the numerator of the benefit-cost ratio.

The use of the costs of the cheapest alternative as a benefit can especially overstate benefits when it is assumed that the lowered costs, because of the public investment, would lead to an increase in activity. If men were inhibited from shipping because of the high rail rates, or if they did not locate in an area because of the high power rates, then the price of the cheapest alternative is more than they would in fact pay; and therefore the difference between the cost of the cheapest alternative and the cost of using a public project is greater than the savings actually realized by the private users of the waterways or public power of the project. Thus, the tangible benefits are far from certain. There have been steady improvements in the concepts of benefits and costs but these have not overcome the difficulties of measurement and especially the projection of the estimates into the future.

In general, the intangible benefits are of a different order. It is not simply the difficulty of finding market evaluations, such as in the case of recreation benefits. Most of the intangible benefits are concerned with social evaluation of such matters as conservation, the family-sized farm, mobility of resources, effect upon degree and type of competition, implications for public health, income redistribution, or balanced regional development. It is possible that by exercising ingenuity monetary values which may make them comparable to the tangible benefits can be found, but as yet no guides have been developed for this research. Until that time, the proposals of the authors to quantify the intangibles as much as possible and present them in supplementary documents may be all that is possible. A danger in this procedure is evident in all three volumes: the intangibles are recognized but barely analyzed. Therefore the significance of the tangible benefits will be weighted at the expense of the intangibles.

The Alternatives

Success in achieving the goals is partially based upon the range of alternatives available. An optimizing rule for actions is one which maximizes outcomes subject to constraints. The alternatives are the variables of the analysis. In normative analysis the division between givens and variables which are subject to policy control is a hazardous task. Not only are we confronted by the analytical problem of identifying those events which are invariant to the choice made, but we must ask whether it is desirable to accept the givens as invariant. Possibly a wider range of choices should be considered. Even prices in the private sector need not be accepted as givens since the government may reject the private evaluations and conditions of supply which give rise to the prices.

But the government does not constantly consider all alternatives. It lacks a well-articulated preference function and an ability to consider all aspects of the economy. The government partitions its decision-making sectors into noncomparable groups. It is true that a choice among possible combinations of these sectors is implicit in the drafting of a budget and of regulatory legisla-

tion, but the economist calls these decisions political and therefore beyond the scope of economic analysis. But the economist within limits is able to make a contribution. Though we may not expect him to be able to show how the national welfare increases by substituting at the margin units of missiles, dams, schools or by changing existing regulations, there is sufficient comparability of consequences so that it is sensible, in considering one program, to analyze the possible alternative gains from substituting another program. If dams are to be used for irrigation should we consider as alternatives: credit for farmers, imports, drainage of swamps, crop research? Or should these be assumed to be given? The partitioning of government decision-making between bureaus with specific functions frequently results in a neglect of goals more general than those of an agency or of alternative programs to achieve a given goal. The government evaluators and the three authors restrict their alternatives to water resources development projects. This is a reasonable perspective for the agencies but it might lead to gross inefficiency from a larger perspective. McKean is very sensitive to this problem and he offers many warnings to alert his readers against the necessary dangers of suboptimization i.e., problems must be partitioned to be manageable but partial analysis will introduce errors.

The assumptions about the givens concerning the rest of the economy are particularly hazardous. They are most likely to be made casually and they may seriously affect the analysis. Eckstein explicitly and the others implicitly assume that the allocation of resources and the structure of prices which rule in the economy are approximately close to those which would result if the economy were perfectly competitive, so that all welfare implications associated with a perfectly competitive economy would also apply to the actual economy. This assumption has the analytical convenience of permitting the researcher to use market prices to value the inputs and outputs of projects, but the assumption has a dubious basis. Agricultural benefits are very seriously affected by price-support and tariff policies. Navigation benefits must be compared with regulated prices in transportation. Power rates are regulated. Eckstein, in violation of his general statement about prices but in admirable recognition of reality, assigns a marginal cost price to railroads in assessing navigation benefits of improved waterways.

More disturbing in the analyses is the lack of attention paid to alternative programs by which the same goal might be achieved. This is, in turn, symptomatic of an even more general problem which is ignored. The volumes restrict themselves to projects and to procedures by which to evaluate projects which have already been proposed. To select the best from a known and restricted set of alternatives is far from maximizing. What are the procedures by which alternatives become known? Is there a best way to search out the alternatives? In the perfectly competitive economy we assume that competition and the drive to maximize will generate all the best alternatives. Though this questionable hypothesis has never been tested, we do not even have a reasonable description of the process of search in the public sector which would permit judgments about its efficiency. The process by which alternatives are discovered and considered may be a major constraint on the possibility of maximizing a set of goals.

Time: Uncertainty, Income Streams, Constraints and Criteria

Of the many issues in the economic evaluation of water projects one of the most perplexing, most discussed and least clarified are the problems associated with time. The treatments of time proposed by the government and the three authors are quite divergent. The differences among them are indicative of the immaturity of the state of economic science when dealing with time. Despite their common analytic traditions and the advantages of reading early drafts of the manuscripts of each other, reconciliations in regard to investment criteria and the handling of uncertainty were not made. This is not to the discredit of the authors as similar differences persist in capital theory when analyzing private investment, where the goals of and the constraints on action by a firm are more clear.

Whatever decision is made about the beneficial consequences which should be attributed to the goal, the benefits must be aggregated over a great many years. If the benefits in different years are not equivalent, and everyone assumes they are not, then weights must be assigned so as to permit addition and comparison, i.e., there is involved the selection of a discount rate for pairs of years. To select the discount rate the identification of the characteristics of the goal over time is not enough, as imperfections in the capital market create constraints on the actions of both government agencies and private parties. The nature of the constraints must be analyzed since the investment criterion will be the maximization of the goal subject to the constraints. In addition to the specification of the constraints there are the ancillary problems of uncertainty and the planning horizon. Should uncertainty enter into the specification of the goal, i.e., are two expected values with different variances to be differently valued; or should it enter into the criteria, i.e., should a rule be used which gives greater weight to more certain consequences; or should it be avoided by arbitrary and often hidden assumptions?

Uncertainty

In the sphere of private decision-making "nonoptimal" criteria such as payout periods have been used for the choice of investments. Use of these criteria would be inefficient if the entrepreneurs had full knowledge, but they are resorted to because they give greater weight to more certain consequences. Neither the government nor the authors alter the investment criteria because of uncertainty. Only McKean recognizes that appraisal of the goal should include consideration of uncertainty.

Eckstein distinguishes between uncertainty related and unrelated to time. If unrelated to time, as in hydrological problems, he defends safety allowances on the cost side. He would add a risk premium of ½ to 1 per cent to the interest rate to allow for uncertainty which is a function of time, e.g., technological changes, demand changes, etc. Like the government agencies, he would present to Congress only the expected values. This is a mild adjustment for projects with an expected life of well over 50 years. He justifies this low risk premium which is uniform for all projects by treating the government as a firm, projects as one of its investments, and then asks what risk the government program as a whole incurs because of the one project. This argument

results in an adjustment for uncertainty in the correct direction, the reduction in present value increasing with the life of the project, but it misses the major problem. The government agencies and Congress must choose among projects and this choice should be affected not only by the expected values but also by the probabilities of a range of benefits and costs. Uniform risk premiums hide the diversity in projects which range from watershed treatment with uncertain hydrology and product demand, to urban water supply where the engineering techniques and markets are far better known.

McKean places the evaluation of uncertainty in the same category as intangibles. He believes that it is desirable to reduce uncertainty, but that not enough is known about the probabilities of the range of outcomes or the utilities of different ranges for the analyst to develop a certainty equivalent. He suggests a supplementary table which would, in fact, sum the uncertainties of the parts of the analysis into one grand statement giving the subjective probabilities of the range of outcomes. It would be left to Congress to evaluate the risks. This explicit treatment of uncertainty is preferable to the sole presentation of expected values or to a uniform adjustment for all projects. But it does not relieve the analyst of the burden of further exploring the possibilities of assessing the value of differences in uncertainty.

The Goal—Maximum Present Value

Both McKean and Eckstein agree on the statement of the goal to be used in selecting projects—to choose a set of projects which would give the maximum present value to the nation. Though there is agreement about the broadly defined goal there is marked divergency in their statements of the more specific goal and investment criteria.

The projects give rise to a stream of benefits and costs in the future. To choose among the time streams, they must be compared. Since the time streams do not have the same shape they must be adjusted to makes them comparable. The most common transformation is the present value of the benefits less the present value of the costs. The problem of analysis becomes the selection of the appropiate rate at which to discount the future benefits and costs. All of the studies assume that a single rate (properly compounded) can be used to evaluate the present value of any future amount. This however is a simplification for convenience of mathematical computation which might suppress important information about the time streams. Frequently the choice among time streams is the choice between streams which have different incomes in a future year t and year $t + 1$. In order to reduce the incomes of any such pair of years to their present values (as part of the present value of the total stream) we require the rate of substitution of a dollar in year t to a dollar in year $t + 1$. The discount rate appropriate to this transformation need not be the same as the one necessary for any other pair of years. Though no general remarks are possible about how to find the discount rates appropriate for the many pairs of future years we should be cautious about a procedure which neglects this problem.

Essentially Eckstein proposes as a discount rate, the rate at which the taxpayers privately value the funds which they provide, through taxation, to

finance the project. He calls this rate the social cost of federal capital and he estimates it at 5 to 6 per cent. He defends this use of a private rate by urging that the agencies should accept the ethical judgment that consumers' sovereignty with regard to intertemporal choice should dominate. Therefore, a private rate of interest should be used in determining the choice of projects and the size of public investments.

Eckstein and Krutilla-Eckstein both recognize that in the political process the future is not valued solely in terms of the preferences of the current population: the beneficiaries should be future generations as well as the current one. But they use the time preferences of the current generation of taxpayers as the basis for the choice of a discount rate. Actually there is no basis other than an arbitrary one upon which to select the particular generation or generations whose preferences should be regarded. If, for example, we should select a later generation their preferences might be to keep the current generation at a minimum consumption level.

Though the economist cannot decide which generation's welfare should be maximized and therefore he cannot "scientifically" choose a discount rate, he can be helpful in the selection of an appropriate social rate of time preference. It may be possible, although it is unlikely, that the economist can discover the social rate of preference implicit in Congressional behavior. Congressional attitudes towards the future are not the same in the cases of moonrockets, cancer research, school construction or flood control. But in the specific area of water resources the economist can carry through the analysis at several rates, one of which would be Eckstein's social cost of federal capital, and he can then inform the Congress of the time implications of the different rates.[2]

McKean's formulation is quite different. He defines a goal which is not independent of the constraints. Rather than valuing income streams in terms of preferences among pairs of future years, he states that the maximum present value is given by that income stream which provides the maximum growth of asset values through the period. In the context of his constraints (which we will discuss in the next section) this goal is meaningful, but it is difficult to believe that the maximum investment in water works can be the acceptable goal of a public program. He recognizes that the utility of an income stream is more than the stock of investment it could generate, by proposing that a supplementary table should show the full stream of income over time, but this table will not help in making the comparison of projects without further analysis.

The Constraints and the Investment Criteria

Investment criteria are rules for the agencies to follow in order to maximize the goals, subject to constraints. The constraints are the institutional environment which limits the choices they can make. I have discussed the problems of

[2] In the Krutilla-Eckstein study of the Hells Canyon case the government's high dam has a higher benefit-cost ratio than the Idaho Power Company's three-low-dam proposal when an interest rate of .025 is used. When they use an interest rate of .055, the social cost of federal taxes, the three low dams are judged more efficient.

constraints earlier in the section on alternatives, but some of the points deserve amplification. McKean and Eckstein assume different constraints, and coupled with their different formulation of the goal, it is not surprising that their investment criteria are at variance.

McKean states that there is no single criterion which can put into proper perspective all the problems associated with different time paths. He suggests supplementary tables to show uncertainty and time paths. His discussion is a model of candid exploration of assumptions and alternative proposals which will assist the government analyst. My statement of his position overstates its firmness. He advocates as the most significant partial test, which he refers to as the "right" criterion, "the maximization of present worth for a given investment budget when the streams are discounted at the marginal internal rate of return" (p. 117). This proposal is directed towards selecting the *set* of best projects given a budget limit. However, Congress usually deliberates on the individual projects, not the set. Therefore, an index of worthwhileness, a rank of preference, must be assigned to a project. If this is needed, McKean suggests that the projects be ranked by the internal rate of return.

Before we proceed with an evaluation of his proposal, the constraints should be stated, since it is the constraints and the inferred goal which would make his treatment unacceptable. He assumes that there is a constant budget limit for the current and all foreseeable years; that all the tangible benefits of the projects revert to the government agencies in revenues; and that all of the constant budget and the benefits-revenues are reinvested in further water projects by the agencies. In addition, he must assume that each year similar new investment possibilities for the government are developed to replace those which will have been undertaken.

Under the above conditions, it is better to select the alternative with the highest present value when the streams are discounted at the marginal internal rate of return.[8] But this choice is based on a judgment which is restricted to

[8] The internal rate of return as a ranking device has a clear intuitive appeal but it can lead to gross errors unless it is supplemented by many complicated side calculations. The necessary process outlined by McKean robs the process of its simplicity. A simple ranking would be incorrect where there existed mutually exclusive projects or where there were different designs for a single project.

Consider two alternative designs for a project which lasts for only two years in either case. Each has the same investment cost of 100 and no operating costs. The first creates benefits of 200 in year 1 and 0 in year 2, while the time stream for the second is 0, 256. There are several projects of lesser productivity and the marginal project has an internal rate of return of .25. The first of the alternative designs has an internal rate of return of 1.00 while the internal rate of return of the second is .60. It would be incorrect to choose the first if the assumption is made that all the benefits are reinvested in the marginal project. If this is done the value of the benefits of the first alternative plus the benefits of the marginal project is 250, while for the second alternative it is 256. Therefore, among mutually exclusive projects there must be side calculations to test for the best one to be put into the rankings.

Complexities are compounded by the difficulties of finding the marginal project. If the mutually exclusive projects in the above illustration had been of considerable difference in size, the use of the larger alternative would have meant that the marginal project would be higher on the list of projects, and therefore, with a higher internal rate of return. Furthermore, the marginal project itself would usually be one of a set of mutually ex-

the value of capital goods at the end of a period, which is only one of the attributes of a stream of income. The sole attention to a final period derives from the constraints on behavior, which leave no alternative to society but to consider only final asset values. In general, an investment option which achieves the highest asset value, if all the income it generates is reinvested, will not generate the preferred stream of consumption and income. Not only is the goal—the highest value of assets—questionable, but it is unlikely to be achieved since it is dubious that the benefits would be reinvested, and if reinvested that they would be reinvested in the marginal projects.

The assumption that the benefits are reinvested is unwarranted. The benefits are not available to the government for investment.[4] The benefits are incomes received by irrigation farmers, inhabitants of flood protected cities, etc., who will invest or consume the benefits. The investment option of the government is not available to the private recipients, and the rate of return on the private use of the income may be greatly different from the government's. If a social rate is rejected for discounting purposes it might be more legitimate to discount the time stream of income at the interest cost, or the internal rate of return of the recipients of the benefits. However, none of the studies has considered this possibility.

If we assume, as McKean does, a constant marginal internal rate of return over time, then we must assume that next year there will be a set of better than marginal projects which are approximately as large as this year's set, with a comparable budget constraint. This is not unreasonable since knowledge and general economic growth will shift the investment schedule upwards. The existence of more worth-while projects in later years, coupled with the assumptions of a comparable budget constraint, makes it important to consider the future constraints explicitly.

Given a constant budget limitation, an investment schedule which shifts with time so that each year similarly worth-while alternatives are available, and benefits which do not result in funds for the agency, then the choice of projects should be affected by the levels of future operating costs. The greater the future operating costs, the less funds will be available for later investments, and therefore the larger will be the number of future projects not adopted

clusive designs all of which might have different rates of return. By iterative processes, these problems can be solved but the rule does lead to highly complex procedures. Though the complications may make the procedures less appealing, they are necessary if a rule which is developed for the selection of a set is to be converted to a ranking device.

[4] It is a fact that the bulk of water resources projects do not have any reimbursement features, that when there is reimbursement the rate of reimbursement is based upon costs rather than benefits, so that the net benefits remain with private parties, and the repayments accrue to the Treasury, not the agencies. McKean recognizes that the assumption of benefits becoming agency revenues is not descriptive of reality, but he justifies it on the ground that the proper perspective should be an "over-all or national water-resources budget. The costs to be covered by such a budget are outgoes in excess of benefits, i.e., receipts to the nation, in any period. These excesses turn out in most cases to be mainly the initial construction costs" (p. 115). A shift to this national viewpoint does not change the fact that the benefits do not reduce the necessity for the operating costs to be met out of annual appropriations from Congress, and that the benefits are reinvested and consumed by the beneficiaries according to whatever preferences and opportunities they have.

even though they are better than currently marginal projects. McKean avoids this complication by assuming that the benefits provide funds which cover operating costs (and therefore the level of operating costs is not relevant), and that only current investment funds are rationed.

However, if the assumption that benefits remain in the hands of private parties is adopted then the level of future operating costs limits the number of new projects as effectively as does the fixed appropriation. In that case, we must be concerned with selecting the *set* of projects which gives the greatest present value for a stream of total costs rather than for the initial investment. Under these conditions the ratio of the annual benefit to annual total federal cost becomes the basis of choice of project if we want to maximize the present value of the appropriation stream. Given an interest rate and a level of appropriations which is constant over time then the variable which characterizes the set of projects which can be chosen is the ratio of operating to capital costs. If we order the sets of projects (where each scale of project is treated as a separate project) by ratios of operating cost to capital then we would keep varying the set until the marginal benefits are equal to the benefit-cost ratio. This benefit-cost ratio could be used as a cut-off ratio in deciding on the scale of projects (the increment should be at least equal to the cut-off benefit-cost ratio) and on the evaluation of projects (the benefit-cost ratio of the project should be at least equal to the cut-off ratio).[5]

The choice between a benefit-cost ratio and an internal rate of return criterion greatly affects rankings since there are extreme variations in ratios of operating cost to capital among projects. McKean's two case-study illustrations have similar benefit-cost ratios while one of them has an internal rate of return of .55 and the other .06.

The investment rule proposed by Eckstein is to rank projects by their ratios of annual net benefits to annual total federal costs. His argument in defense of the use of benefit-cost ratios is similar to the above. But there are aspects of his argument which affect the practical use of the ratios as criteria. He assumes that benefits are retained by private parties, the appropriations to the agency are limited for this and later years, and the rate of return on a project should be at least as great as the private opportunity cost of tax-raised federal funds. In addition, he asserts that "an interest rate of 5 or 6 per cent in benefit-cost analysis would preclude the justification of most projects. . . . Under a high interest rate the federal government would reduce its efforts in the resource field" (p. 99). This final assumption weakens his argument for the use of a benefit-cost ratio. If the existing appropriations are more than enough to initiate worth-while projects, then there does not exist capital rationing. One might argue that there will exist capital rationing in the future if operating costs continue to mount so that worth-while projects cannot be undertaken because of an appropriation limit. But operating and maintenance expenditures are about one-fifth of new construction expenditures, and therefore they are unlikely to be an inhibiting factor on new investment in the near future. If capital rationing is nonexistent, then ranking by a benefit-cost ratio is unnecessary. The government only needs to adopt the rule to undertake every

[5] An illustrative simple model is presented in the Appendix.

investment in water resources where the present value of the benefits less the present value of costs, all discounted at the social cost of federal taxation, is greater than zero.

Eckstein does not directly propose to use the social cost of federal taxation as the interest rate. Instead he suggests the use of a lower social rate of time preference, 0.25. But to determine the scale of a project, which is the same as the choice among mutually exclusive projects, he proposes adding increments as long as the benefit-cost ratio of the increment is greater than the benefit-cost ratio of the marginal project when the marginal project has an internal rate of return equal to the social cost of federal taxation. Since the interest-cost part of federal costs is based on a .025 rate, the marginal benefit-cost ratio will be greater than one.[6] Eckstein believes that this is a compromise between the desirable social goal of fostering long-lived projects and that of preventing the waste of capital. But since a choice between more or less durability involves increments of durability which must satisfy a benefit-cost ratio yielding a return of 5 to 6 per cent, it is a private interest rate which will control this decision.

His argument in defense of the use of a social rate of time preference when the budget limit is effective is just as valid when the limit is ineffective. He does not justify this specific social rate. Probably there is no single acceptable rate. Government decision-making is partitioned and different rates will be found acceptable for different programs.

Clearly the treatment of time has not been resolved by these studies. McKean, in practice, uses several discount rates in lieu of a known marginal internal rate of return, but the indifference to future operating costs weakens his criterion. Eckstein's rule for the selection of an interest rate would weaken, in practice, the argument for his proposed investment criterion. To say that their disagreements are based upon different assumptions about the appropriate constraints is true but understates the problem. Economic analysis does not have a model of the government as a behavioral unit. Instead, analysis has tended to abstract from its unique characteristics and has treated it as a passive intermediary for private households and producers. This lifeless image has inhibited the development in these studies of optimizing-behavior rules for the government.

Technological External Economies

McKean discusses spill-over effects, Krutilla-Eckstein and Eckstein discuss interdependencies, which are forms of external economies or diseconomies. The lack of an accepted name reflects the confusion about the concept. Despite the

[6] This would mean a restatement of equation 4 in the Appendix to read:

$$\frac{d\beta}{d\alpha} = \text{the greater of } \frac{\beta}{\alpha + r},$$

when r is a low social rate of time preference, or

$$\frac{\beta}{\alpha + .055},$$

when .055 is the social cost of federal taxation.

importance assigned by the authors to technological interdependencies as a basis for government projects, their analysis is disappointing. Such interdependencies do not play a serious role in Eckstein's analysis. McKean has an excellent chapter distinguishing between pecuniary and technological external economies, but general procedures by which to discover the technological external economies are absent. In Krutilla-Eckstein interdependencies are a major focus of analysis. They take on meaning, but the case studies are restricted to interdependencies among fiscally independent water resource units. In McKean and in Eckstein the interdependencies are complications in the identification of costs and benefits; in Krutilla-Eckstein the interdependencies are the basis of a discussion of proper organization to make sure that efficient operations are not reduced because of uncompensated benefits or unpaid costs.

The technological external economies associated with the growth of the market and economic base are increased efficiencies in the project area.[7] They are neglected by the present volumes and by government studies. Unfortunately, the necessary studies of economies of scale in areas where these projects are being located are not far enough advanced to permit the analyst to make reasonable estimates of the economies of scale.

Organizational Issues

A major weakness of the studies is the absence of a serious analysis of the institutions. This has marred their discussion of the constraints necessary to specify the investment criterion. It more seriously affects the relevance of their analysis. Rules which ignore the significance of organizational structure and goals for the selection and operation of projects, are utopian. The teleological assumption that the government and all its agencies exist to maximize national welfare simplifies the task of the analyst but unfortunately it renders impotent rules formulated on that basis unless the government is organized to serve that purpose.

It is common practice for economists to plead that qua economists they can deal with efficiency criteria subject to the constraints of whatever organizational structure exists. But it is also clear that changes in institutions or usages may result in large increases in efficiency. The economist has traditionally used his analytical tools to explain and to evaluate alternative institutions and this is what is so badly needed and lacking in these studies, and in government studies also.

Eckstein does discuss the institutions of pricing, repayment and cost-sharing possibilities, as part of his financial analysis of each function, but these discussions are not systematic. These practices do not contribute to and may

[7] Some of the external economies appear as secondary benefits which McKean and Eckstein rightfully argue are generally illusory from the viewpoint of the national welfare. Secondary benefits are the increased profits accruing to the processors of the products of the projects and the suppliers of the inputs of the projects. Generally these increased profits may be nonexistent or just represent transfers. McKean erroneously refers to the increased profits as increased incomes of the factors.

militate against efficient operations. Krutilla-Eckstein examine three cases of public vs. private development. The major issues in relative efficiency arise from the problems of interdependency among fiscally independent units and the size of market. Their case studies are highly suggestive of interesting hypotheses about the organization and operations of water resources development projects whether public or private. And while McKean does not explicitly discuss institutional problems, his discussion of suboptimization is extremely helpful in understanding decision-making in a many-structured organization.

Concluding Remarks

Reviewers are prone to justify their efforts by finding fault. In the very difficult area of economic analysis designed to improve the efficiency of government activities it is all too easy for a reviewer to be critical. Economic efficiency is not the most important goal for government, it is extremely difficult to simulate market activities, and we have no models of government behavior. These volumes are the best studies to date of the use of economic criteria. The authors have not stopped at pious statements of marginal conditions but have seriously attempted to develop rules which could be adopted by agencies. Their efforts go a long way to improve the discussion of economic criteria by government agencies.

Appendix: A Simple Model for Maximizing the Present Value of the Investment Budget

Consider the following simple model which assumes a constant investment schedule, a constant budget and benefits which do not return to the agency.

Definitions:

$G_t = \bar{G}$ is a fixed government allocation for water resources development which is constant over time.

K_t is the stock of government investment in water resources projects in year t. There is no depreciation.

$O_t = \alpha K_{t-1}$ is the amount of operating costs in year t. α is the ratio of operating costs to capital and is constant over time.

$B_t = \beta K_{t-1}$ is the amount of net benefits in year t. β is the ratio of benefits to capital and it is constant over time.

$I_t = \bar{G} - O_t$ is the new investment in water resources projects in year t.

The stock of capital in the initial year $K_{t0} = \bar{G}$.

In year 1

$$\begin{aligned} K_{t1} &= I_{t1} + K_{t0} \\ &= \bar{G} - \alpha K_{t0} + K_{t0} \\ &= \bar{G} + (1 - \alpha)K_{t0}. \end{aligned}$$

In year t

$$K_t = \overline{G} \sum_{n=0}^{t} (1 - \alpha)^n$$

(1) $$K_t = \overline{G}\left(\frac{1 - (1 - \alpha)^{t+1}}{\alpha}\right).$$

The benefits in year t are:

$$B_t = \beta\overline{G}\left(\frac{1 - (1 - \alpha)^t}{\alpha}\right).$$

Assuming a perpetual life and a social rate of time preference, r, the present value of the benefits is:

$$\begin{aligned} V_B &= \sum_{t=0}^{\infty} \frac{\beta\overline{G}}{(1 + r)^t} \frac{1 - (1 - \alpha)^t}{\alpha} \\ &= \frac{\beta\overline{G}}{\alpha} \sum_{t=0}^{\infty} \frac{1 - (1 - \alpha)^t}{(1 + r)^t} \\ &= \frac{\beta\overline{G}}{\alpha}\left(\sum_{t=0}^{\infty} \frac{1}{(1 + r)^t} - \sum_{t=0}^{\infty}\left(\frac{1 - \alpha}{1 + r}\right)^t\right) \\ &= \frac{\beta\overline{G}}{\alpha}\left(1 + \frac{1}{r} + \frac{1 + r}{\alpha + r}\right) \\ &= \frac{\beta}{(\alpha + r)} \frac{\overline{G}(1 + r)}{r}. \end{aligned}$$

The present value of costs is:

$$V_C = \frac{\overline{G}(1 + r)}{r}.$$

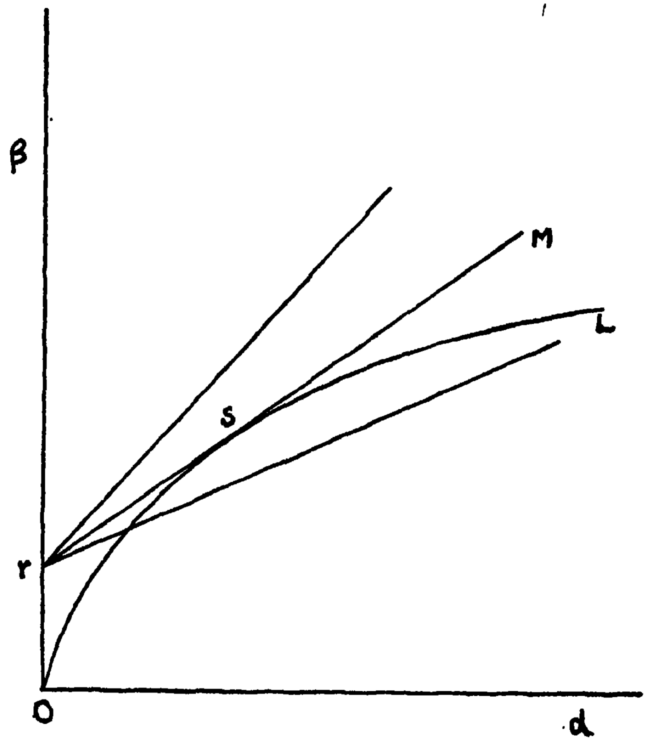
The benefit-cost ratio is:

(2) $$V_B/V_C = \frac{\beta}{(\alpha + r)}.$$

The present value of the investment is

(3) $$V = V_B - V_C = \left(\frac{\beta}{\alpha + r} - 1\right)\left(\frac{\overline{G}(1 + r)}{r}\right).$$

The investment option, given a constant appropriation $\overline{G}$, is a choice among a set of projects with different degrees of capital intensity, α, the ratio of operating costs to capital. (Different scales of the same project are considered separate projects.) In the figure the projects are ordered by α.



OL is the highest β, the benefits-capital ratio, of any project at a given α. In order to choose the best we must maximize the present value with respect to α.

$$V_{\max\alpha} = \frac{dV}{d\alpha} = 0 = (\alpha + r)r\bar{G}(1 + r)\frac{d\beta}{d\alpha} - \beta(r\bar{G}(1 + r))$$

$$0 = (\alpha + r)\frac{d\beta}{d\alpha} - \beta.$$

(4) $$\frac{\beta}{\alpha + r} = \frac{d\beta}{d\alpha}\,.$$

Equation 4 gives the maximization condition for the present value. In the figure this maximization condition is the tangency of rM with OL, the production opportunity curve. r is the level of the discount rate. rM is one of a set of rays from r. Each ray represents a different benefit-cost ratio. The benefit-cost ratio line tangent to OL gives us the optimal ratio in order to maximize the present value of the investment budget. S, its point of tangency, tells us the best α or capital intensity.

THE AFFLUENT SOCIETY[1]

A Review Article

By RUTLEDGE VINING*

As all now know, this book by J. K. Galbraith has had an extraordinary public appeal. A number of reviews have appeared. The book was accorded the lead review in the Sunday issue of the *New York Times* for June 1, 1958. A review article by C. A. R. Crosland was given the lead place in the British weekly *The Listener* for September 28, 1958. In the September 20 issue of the *Economist* there is a third review. All the reviews commend the book as a provocative and important statement of a point of view, and all include comments upon various shortcomings that students of Mr. Galbraith's subject would note. The reviewer for the *Economist* uses a sequence of adjectives to convey his impression: "*The Affluent Society* is penetrating, fresh, knowledgeable, humane, and—though it gets off to a slow start—entertainingly written. It is also perverse, muddleheaded, provincial, and dangerous."

One might find grounds for questioning the "knowledgeableness" of the book, apart from however learned its author may be; for much of that part which purports to be factual and much that is interpretive seem grossly casual; and much of that part that takes the form of deduction seems somewhat loose and questionable. And, too, there perhaps will be some readers for whom the "entertainment" afforded by the book will be tempered by what they may interpret as a sustained note of something resembling presumption and by what they may gather to be the author's lively awareness of being naughty. It is a book written in the tradition of Veblen but lacking the deft touch of the master—or so it may seem to some.

But however this may be, any reader may obtain in these easily accessible reviews a reliable conception of the general character of the book and of the nature of the contents of the various chapters. I shall attempt in the space made available to me to consider in more general terms the nature of political economy, using this work of Galbraith's as an example of a contribution by a political economist.

I

To paraphrase a remark made about philosophy, one may say, I think, that political economy is not a doctrine or a theory but rather is an activity. A political economist, then, is one who participates in this activity, and Galbraith's endeavors may serve as an illustration.

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[1] *The Affluent Society*. By J. K. Galbraith. Boston: Houghton Mifflin Company, 1958. Pp. xii, 368. $4.75.

Consider what he is engaged in doing. It is as though he were seated at a conference table discussing with a number of other persons the performance of something which now exists and which may be altered by the joint decision of these persons. He will have been induced by what he has observed to a doubting state of mind regarding whether or not these persons have availed themselves of as good a design of this something as it is within their power to choose. Indeed, by now Galbraith no longer doubts. The thing as it stands performs deuced badly, and he has set about to explain to the persons how his observations and reflections have led him to this belief. He considers a variety of variables—some simple and some exceedingly complex—in terms of which the performance of the thing may be observed. With reference to these variables, he describes the working characteristics of the design of the thing as it now stands. He then suggests a way of modifying the structure of the object so as to improve its performance. A major part of what he has to say is devoted to explaining how it is that the choosers may experience inhibitions that hinder their seeing what he observes from his point of view. He is sure that they will have this difficulty, and some of this he attributes to shenanigans—the exercise of a kind of thought control by crafty, deceitful, selfish men; but most of it he traces to the honest stupidity of the allegedly wise whose advice the choosers are accustomed to follow. Yet, regardless of the uncommonly large amount of space given over to the discussion of the perfidy and stupidity of captains of industry and of practitioners of the higher learning, Galbraith's primary concern is to describe the performance of something that exists and to explain to persons who may exercise a choice how this something may be modified so as to improve its working properties.

Before considering the identity of the choosing agent and the nature of the thing subject to choice, as these may be discerned in the context of Galbraith's discussion, I shall briefly review a simpler kind of situation in which men discuss with one another a choice that they are about to make. Let us go back a generation or so and try to imagine what might have gone on in the minds of students of another form of choice behavior. Consider a modest counterpart of Galbraith in the nineteen-twenties or -thirties, and suppose that the attention of this inquirer has been caught by men who are in the act of jointly choosing some one or another of the kind of things which now constitute the subject matter of applied theoretical statistics. This is at a time before the modern development of this subject, so that the student whom we have in mind has yet to conceptualize the behavior phenomena that he is observing. He is curious and sympathetic and he asks himself, in effect: Now, precisely what are these people trying to do and what conceivable knowledge and technique could be brought to bear for helping them do it?

After watching and listening for a while he concludes, let us say, that what the people are doing may be classified into four kinds of activities, each of which presents a distinctive type of subsidiary problem. First, they are trying to catalog all the procedures they can think of that would serve their purpose. Such a listing of possibilities constitutes a set of alternatives; and the student may contemplate the question of how one might make more precise the specifications of the thing which is subject to choice and the set of all conceivable

forms of this thing. Second, they are trying to hit upon some appealing way of measuring, or otherwise describing, the performance of any alternative which may possibly be chosen. Third, having found a suitable way of measuring or describing performance, they are trying to find an effective way of predicting the performance of any alternative. Finally, having before them the descriptions of the respective expected performance properties of all known alternatives, they are trying to pick out the particular one whose performance is at least as good as that of any of the rest.

With these characteristic activities in mind, the student then tries to conceive of ideally reasonable men so engaged, and he poses a series of questions. How would reasonable men specify the alternatives? That is, specifically what may one do in order to describe an example of the thing subject to choice and in order to indicate precisely the differences between alternatives? And in terms of what variable quantities and qualities would they observe the performance of any alternative? That is, what data would they seek to obtain and what arrangements of the data and what computations would they make in order to convey a precise sense of a difference between the respective performances of any two alternatives? And what analysis may be applied and what may otherwise be done so that a person may arrive at predictions of performance measured in this selected manner? And what would be the source of one's confidence in the realiability of these predictions? Finally, how would sensible men recognize in the arrangement of these observable data the "betterness" of performance of one alternative over that of another?

During the past thirty years, inquirers such as we are now imagining have provided answers for the above questions. Theoretical statistics in its present form has more or less naturally emerged as a result of special students explicitly considering these questions; and to the extent that all aspects of the deliberations of men engaged in making a choice are covered by this series of questions, statistical theory provides a complete account of the choice phenomena in the restricted kind of situations with which the theory purports to deal. The relevance or validity of any part or feature of the theory may be understood or questioned in terms of one or the other of the questions. And for such cases wherein men are choosing things like sample survey designs, designs of experiments, inspection systems, decision functions of various sorts, the knowledge and technique afforded by theoretical statistics may be applied most handsomely. And we may add for later reference that when the persons who are responsible for the choice enlist the assistance of the specialists in this theory, it is knowledge and technique rather than wisdom that the specialist is expected to contribute.

II

With the above case as a contrast, let us consider now an inquirer like Galbraith whose attention and curiosity has been caught by men in the act of jointly choosing some such thing as is called the "monetary system" or "tax system" or "trade restriction system," or, in general, some modification of what is called the "economic system." Galbraith's case exemplifies the prototype inquirer that we now have in mind, but no less does the case of an Adam

Smith or a David Ricardo, or, to take Galbraith's examples of what he regards as the more characteristic American prototype, a Henry George or a Thorstein Veblen, or, to come to recent times, a Henry C. Simons or a J. M. Keynes. The inquirer we are considering, observing men jointly engaged in choosing or modifying the details of the "economic system," raises questions regarding what the men are trying to do and what kind of knowledge and technique might be found helpful by the men in their doing it.

First, who are these persons whose behavior arouses the curiosity and attention of this prototype inquirer? Patently, they are members in good standing of a commonwealth of free men—meaning a community of men who jointly choose the constraints and prescriptions which they mutually impose upon their respective choices of ends and means. Are all the human beings who live within the community members of the commonwealth, solely by virture of their being human? No; it is conceivable that only a small part of the population enjoys the privileges of membership, the rest being held in some form of thralldom. But some members of the population do exercise a choice in this regard. These persons look upon themselves as the joint authors of the constraints which they mutually impose upon their respective private choices; and they are continually engaged in reviewing the performance of the existing system of constraints, seeking modifications that may be made in the system for its improvement. These are the persons to whom Galbraith addresses what he has to say. He is speaking to men who have a choice to make regarding the details of the "economic system."

Next, what is the nature of this that is being chosen by these persons? That is, when someone proposes to change the "system," what is the concrete thing that the proposal would alter? We may respond to this by looking at and seeing that which is actually chosen when men authorized to make a choice deliberately take steps to change the "system." When people, acting through their legislative body, deliberately alter the monetary and banking system for the improvement of its performance, what they in fact do is to choose from among alternative monetary and banking bills. To adopt a new monetary and banking bill is to alter the constraints upon and prescriptions of the private actions of individuals. That which people directly change when they speak of themselves as changing the "economic system" is nothing more nor less than the system of legislative enactments and administrative rules. The "system" that is subject to choice, then, is a system of rules constraining private actions. And this, we may add, is analogous to the thing that is chosen by the persons whose behavior constitutes the subject matter of modern statistics, for the object chosen in that case also is completely described by a system of rules.

Now, when this inquirer—the one whose curiosity is aroused by the behavior of these persons who as legislators are engaged in making a choice among alternative "economic systems"—when this student reflects upon what these persons are trying to do and what conceivable knowledge would assist them in doing it, he must surely come to the same series of questions as those outlined above for the case of our other inquirer. That is, in both of the situations—that which is studied by political economists as well as that which is studied by modern statisticians—the human beings who exercise the choice go

through the same kinds of deliberations. In their discussions among themselves, or with specialists whom they may have asked to help them, those who are to make the choice are trying: (a) to raise to mind a description of the essentials of the "thing" that is subject to choice and the set of all conceivable forms of this thing; (b) to select a way of observing and describing the performance of any given one of these things—i.e., to specify the quantities and qualities and the definitions of variables in terms of which a difference between the respective performances of any pair of alternatives may be observed; (c) to devise a way of analyzing and predicting the performance of any given alternative as this performance would be observed in terms of the selected variables; and (d) to mutually recognize improvement or betterness in a comparison of the respective performances of any pair of alternatives.

In either of the situations there are two distinct kinds of phenomena to be described, one of which is a function of the other. That is, an adoption of a particular form of the thing subject to choice results in an outcome. This outcome is observed in the respective values of certain variables that have been selected in some way by the choosers; and for each possible form of the thing, there is a corresponding set of expected values for these variables. The performance characteristics are described by these expected values, and determining the functional relationship between the form of the entity chosen on the one hand and the expected values describing the performance characteristics of this entity on the other is the task of analysis. But then there is the additional step of recognizing betterness in a comparison of the descriptions of performances attributed to any two forms of the thing subject to choice.

III

Mr. Galbraith begins his Chapter 20, having six more chapters to go, with the statement that he regards himself as having accomplished in the preceding nineteen chapters the main task of his essay:

> Its concern has been with the thralldom of a myth—the myth that production, by its overpowering importance and its ineluctable difficulty, is the central problem of our lives. We have seen the sources of this myth. And we have seen some of the consequences—the tenuous and maybe dangerous process of consumer demand creation, recurrent inflation, social imbalance—to which the myth commits us. Emancipation of the mind is no less worthy enterprise than emancipation of the body. The bondsman, given his freedom and persuaded of its virtues, is ordinarily left to enjoy it. Nor is the emancipator blamed for failing to give him a list of things to do (p. 281).

He goes on to say that men must and will:

> . . . see a purpose in their efforts. This purpose can be non-sensical, and . . . men can labor to make sense out of single steps towards the goal without ever pausing to reflect that the goal itself is ludicrous. . . . Thus it is that an essay such as this is far more important for what it destroys . . . than for what it creates.

This is Galbraith's statement of what he conceives to be the important contribution that he, as a specialist, can make. He sees persons who have a choice to make among alternative designs of an economic system, and after reflecting upon how he can be of most assistance he declares himself and sets to work.

One interpretation of his remark would be as follows: There exists a population of people over whom a spell has been cast or who are possessed by an unfriendly spirit of some sort. Galbraith is occupied with casting out this spirit—and the rhetoric of his book corresponds to the swinging of incense pots, the ringing of bells, chanting, and dancing. When he has exorcised the spirit and "emancipated the minds," he will have done these persons the really important service; for they will then be able to think and see clearly—at least for a while—and thus may make more sensible choices, regarding the design of their economic system, than has heretofore been the case.

But one may take a more sympathetic view of what Galbraith is doing in his book. We may think of him as more or less soberly addressing his remarks to men not possessed but capable of reason and urging them to concentrate their attention upon the choice that they are engaged in making. With reference to task (a) above, he considers with them various ways of modifying the design of their "system." In Chapter 21, for example, he makes explicit suggestions for altering the "system"; and these suggestions—as do his others and as did those of Adam Smith, David Ricardo, H. C. Simons, J. M. Keynes—take the form of proposed amendments of a system of legislative enactments. By implication, then, he indicates to them that that which is actually being chosen by these persons is a system of rules which they mutually impose as constraints upon their respective private actions. And with the chooser's attention concentrated upon the concrete object of choice, he asks them to reflect upon the variables in terms of which they are accustomed to observe the performance of any given design of the object. The familiar variables, he says in effect, are those to which have been given names like production, efficiency, allocation of resources—each of these being a variable in the literal sense that it refers to something that varies. Men count and measure and thus compile numbers and arrangements of numbers by which they purport to quantify these variables; and when proposals for modifying the "system" are made, the questions that men are accustomed to raise have to do with what would be the effect upon these variables if the proposals were adopted. That is, it is in terms of the expected values of these variables that the performance of the system is conventionally viewed.

He then submits the grounds for his judgment that the conventional preoccupation with these variables yields a misleading and dangerously wrong conception of the respective performances of alternative systems. He devotes much time to explaining how the composition of increments to the gross national product belies the optimism that one might have felt about the rate of growth of the "well-being" of individual members of the community; and he explains his views regarding how it is that under modern conditions the alleged "consumer sovereignty" is a delusion. He refers back to the time of Adam

Smith (who, we may recall, looked upon his work as that of one practicing "a branch of the science of the statesman or legislator"); and he points out that these variables in question are the ones in terms of which Smith, Ricardo, and the like proposed that the performance of a system of legislative enactments be viewed. But he suggests that it would better become present-day political economists were they to try to do what we might imagine a perceptive man like Smith doing today rather than what he actually did in the 18th century. And with this, he introduces other variables that he recommends for the description of salient aspects of the performance of a modern system: rate of resource employment; price level; income distribution; et cetera. In terms of such variables, there would be other derived variables: degree of price instability; degree of employment instability; degree of inequality of income distribution; personal security; national security; coalition structure; power concentration; et cetera. Each of these is a variable in the sense that whatever be the definition of its measure the value of the measure may be different for different systems of legislative enactments. Expressions such as "tendency toward inflation" or "tendency toward depression" or "tendency toward concentration of power" or "tendency toward personal insecurity" refer to likelihoods of occurrence of certain states of affairs that can be recognized in and described by arrangements of the values of certain variables or of defined measures of these variables. And to say that "given the existing system, this will be the tendency" is to say that the stipulated state of affairs is to be expected as an outcome of an adoption of this system.

This remark brings us to the next step. So far, in our interpretation of what Galbraith is doing in his book, we have had something to say about (a) and (b) in the four-stage outline above. We may now go to (c). He considers the relationships among the variables in terms of which he proposed to observe performance. For example, he discusses what he calls the "nexus between production and income security" (p. 293); and by this he means that with the system as it stands there is a certain relationship between these variables. By "system" he clearly means a system of enactments, for when he proposes a way to "break this nexus," for the improvement of the system's performance, the change recommended is a change in the system of legislative enactments. There are numerous such relationships discussed. What he calls "the theory of social balance" purports to be an explanation of the relationship between the "level of production" and the "composition of production." With the present system in force, there is supposed to be a tendency for certain changes to occur in the "composition of production" when the "level of production" increases; and he proposes changes in the system of legislative enactments which would change this relationship (pp. 311 et seq.). Also, the "price level" systematically rises when the "level of employment" increases. "As matters now stand"—i.e., with the system of legislative enactments as they now are—"the economy is patently unstable at full employment" (p. 302); and "instability" refers to what "tends to happen" to certain variables.

There is then (d)—i.e., the recognition of betterness or improvement in a comparison of the respective performances of any pair of alternatives available for choice. Galbraith refers to the performance of the system as it stands and declares: "This is taken as a serious indication of economic failure, and is" (p. 302). By "economic failure" is meant unacceptable performance of an economic system. Now to state that something is faulty is to imply that there is something better, and the reader may see for himself the modifications which Galbraith proposes, the performance characteristics attributed to the modified system, and the grounds for the judgment that the expected performance of the proposed new system is better than the observed performance of the old.

IV

The tone of Galbraith's book has been a hindrance to my taking a sympathetic view of the work. He spends what to me is a tiresome amount of time being gay about a bogus article which he calls "conventional wisdom"; and he seems to see himself as presenting to the public the genuine article, playing, as it were, a somewhat positive version of the Socratic gadfly. But wisdom is not what the persons who have choices to make ask of specialists. Persons who are choosing modifications of systems of legislative enactments, like those choosing systems of rules such as modern statisticians study, ask specialists to provide special knowledge and technique that may be brought to bear upon the four kinds of deliberations that we have outlined. Wisdom is derived from many and diverse sources, but special knowledge and technique are the subject of study of special fields of inquiry.

And therein lies, I think, the genuine merit of Galbraith's work. If we consider how well he does these four tasks, we must say that he does them most awkwardly, haphazardly, and unreliably as compared with the way modern statisticians do these tasks for their restricted field of choice phenomena. And it would be unwise in the sense of imprudent for a people to take Mr. Galbraith seriously as a possessor of such special knowledge and technical ability as his pronouncements and advice would seem to presuppose. But the virtue of this work of Galbraith's is that in addressing himself directly to these tasks he at least is trying to do the relevant things. His work, unreliable and unsystematic in itself, is nevertheless a call to competent students and analysts to direct their attention to the essential descriptive and analytical tasks. And there is a goodly freshness in this that may lend hope to those who despair in contemplating the episodic enthusiasms for irrelevancies that have characterized the modern history of our subject as a special field of inquiry.

COMMUNICATIONS

Income Velocity and Anti-Inflationary Monetary Policy

Recent changes in monetary velocity have led to renewed interest in its behavior and in the resulting implications for monetary policy. In particular, the view has been widely expressed that anti-inflationary monetary policy is unlikely to be successful because of offsetting movements in velocity, no matter how effective it may be in controlling the volume of bank reserves and the supply of money. It is asserted that monetary restraint will for the most part be nullified by increases in velocity which permit total spending to continue unabated.[1]

The 1955-57 experience is frequently cited in illustration: gross national product rose by $61 billion (or 16 per cent) between the first quarter of 1955 and the third quarter of 1957, despite a total expansion in the money supply of only $4 billion (or 3 per cent) over this period. The increased spending was primarily accomplished through a more rapid turnover of the money stock, with income velocity rising from an annual rate of 2.93 in the first quarter of 1955 to 3.30 in the third quarter of 1957, a rise of 13 per cent.[2] Conclusion: orthodox anti-inflationary monetary policy should be relegated to the sidelines as substantially impotent, rendered ineffective by offsetting swings in velocity. Fiscal policy and/or selective controls should be substituted in its stead.

Nevertheless, although on the surface they seem reasonable enough, these conclusions leave one uneasy. Is anti-inflationary monetary policy really of so little use? There is no doubt that there was pressure to economize on cash balances in the 1955-57 period, with funds relatively scarce; but is this a new phenomenon with which economists (including the monetary authorities) have had no previous experience? Cannot such factors be taken into account by the central bank in deciding upon the proper kind and degree of restraint required to achieve given ends? In brief, and with full awareness of the very real limitations of monetary policy, has not the case against its effectiveness been overstated?[3]

The purpose of the present paper, however, is not to present a full-blown

[1] See, for example, [6] [9] [11]. Such views already show some evidence of becoming rather firmly imbedded in the web of present-day economic thought, as evidenced by the comments of W. W. Heller [4, pp. 646-47].

[2] To appreciate the significance of such magnitudes it should be noted that with a constant money supply of, say, $130 billion, a change of only 0.1 in income velocity would be associated with a change in GNP of $13 billion.

[3] Arthur Smithies would combine monetary ease with fiscal restraint in order to prevent inflation [12]. However, his program represents an attempt to achieve a more complex goal than merely restraining aggregate expenditures—namely, also to shift the allocation of resources as between consumption and investment. This is quite a different matter from the doubts raised as to monetary policy by the authors cited in footnote 1. On this same subject, see also A. P. Lerner [8, pp. 258-63].

apologia for monetary policy, but rather more modestly to question whether these offsetting swings in velocity are actually as damaging as they appear at first glance. Might there not even be *advantages* in such velocity movements which could help rather than hinder the effectiveness of anti-inflationary monetary policies?

Chart 1 shows the annual movement in GNP, money supply, and the resulting income velocity for the period 1919-57; Chart 2 does the same for the period 1948-57, by quarters.[4] They reveal that income velocity reached a peak of 3.30 in the third quarter of 1957. Although income velocity was about 4 in 1919, and again in 1929, it had not approached a level as high as that reached in the third quarter of 1957 since the 3.29 recorded in the year 1931. For the most part it remained below 3 during the years 1932-55, falling at one point to below 2. The record also reveals that short-run fluctuations in velocity have been frequent, with velocity generally rising when GNP has been rising and falling when GNP has been falling. At least this was generally true from 1920-32 and again from 1946-57, although from the mid-1930's to 1946 no such relationship existed. In those years of depression and war the money supply rose so substantially that velocity was usually decreasing, even when GNP was rising.

It should be no surprise that income velocity and GNP often move together and in the same direction, even though it is this very relationship which has led to the disillusionment with monetary policy cited above. After all, with income velocity defined as the quotient of GNP divided by the average stock of money, a countercyclical monetary policy which limited increases in the money supply when GNP was rising close to (or above) the full-employment level, or which attempted to expand the money supply when GNP was falling, would be expected to result in velocity changes in the same direction as the movement in GNP.

I. *Reserve Positions, Interest Rates, and Income Velocity*

The immediate impact of monetary policy, of course, is upon the banking system. As pressure is imposed upon reserve positions, short-term interest rates tend to rise, followed, perhaps with a lag, by longer-term yields. The

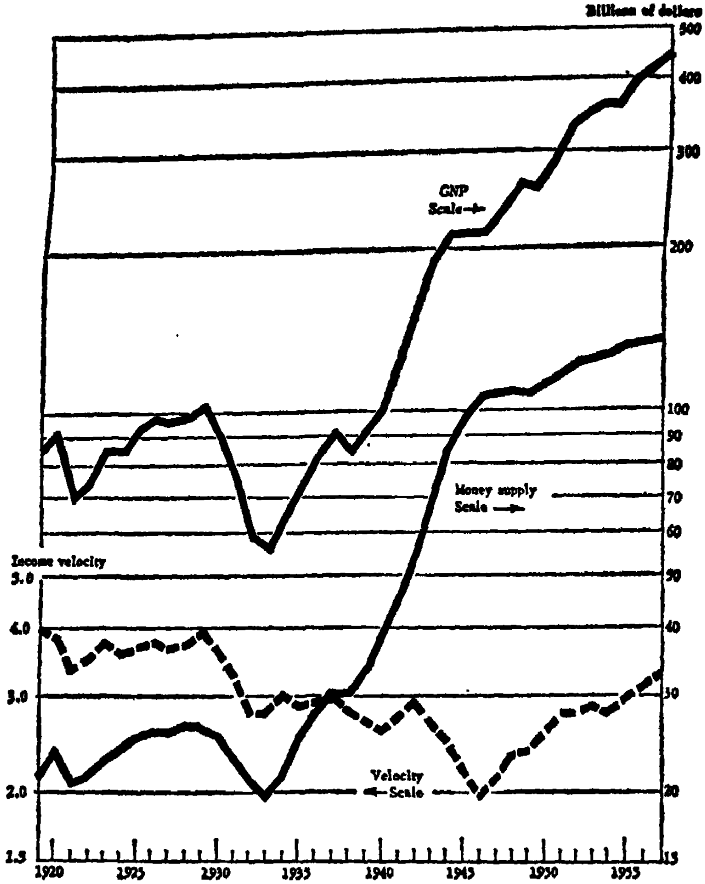
[4] Lack of space prevents publication of the tables from which Charts 1-4 were constructed. However, the author would be pleased to provide mimeographed copies to interested readers. The money supply is defined as demand deposits adjusted (i.e., other than interbank and U. S. government deposits, less cash items in the process of collection) plus currency outside banks. The data are yearly or seasonally adjusted quarterly averages. Some prefer to include time deposits in the money-supply denominator. If this is done the 1955-57 rise in income velocity is much smaller, and conclusions such as are referred to in the initial paragraph of this paper become suspect on these grounds alone. However, this approach has been eschewed since it would in large measure ignore rather than respond to the point at issue.

Recent gross national product data are from the *Survey of Current Business* [15]. GNP is used as the numerator in the calculation of velocity for purposes of simplicity, although R. A. Gordon has offered convincing reasons for using only private spending instead [2]. For present purposes the difference is not particularly important. As Selden shows, a wide variety of definitions have been employed in discussions of income velocity [1, esp. pp. 234-51].

CHART 1

INCOME VELOCITY

Annually, 1919-57

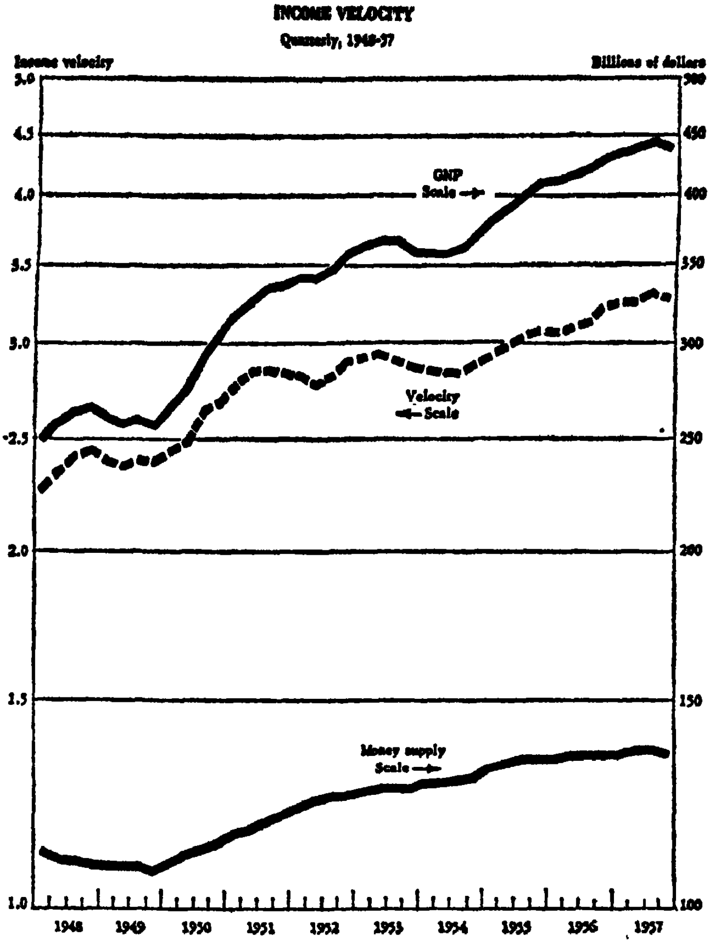


Note. Plotted on ratio scale to show proportionate changes.

clearest periods of restraint in recent years, for instance, were from about the second quarter of 1952 to mid-1953 and from the first quarter of 1955 through the third quarter of 1957. In both periods member-bank free reserves (excess reserves less borrowing from the Federal Reserve Banks) declined to significantly negative levels, Treasury bill yields and long-term interest rates rose, and velocity increased. However, the total money supply did expand to a certain extent in each case; had it remained unchanged, interest rates and velocity might well have risen even further.

The income velocity of the money supply and the average issuing rate on Treasury bills are plotted in the form of a scatter diagram in Chart 3 for the period 1948 through 1957. The above-mentioned periods during 1952-53 and 1955-57, when GNP rose while the expansion of the money supply was held in check by the central bank, clearly reveal the simultaneous rise in Treasury bill rates and income velocity; the close positive relationship be-

CHART 2



Note: Plotted on ratio scale to show proportionate changes.

tween bill rates and income velocity taken in time sequence from mid-1952 to mid-1953 and from the third quarter of 1954 through the third quarter of 1957 is particularly striking.

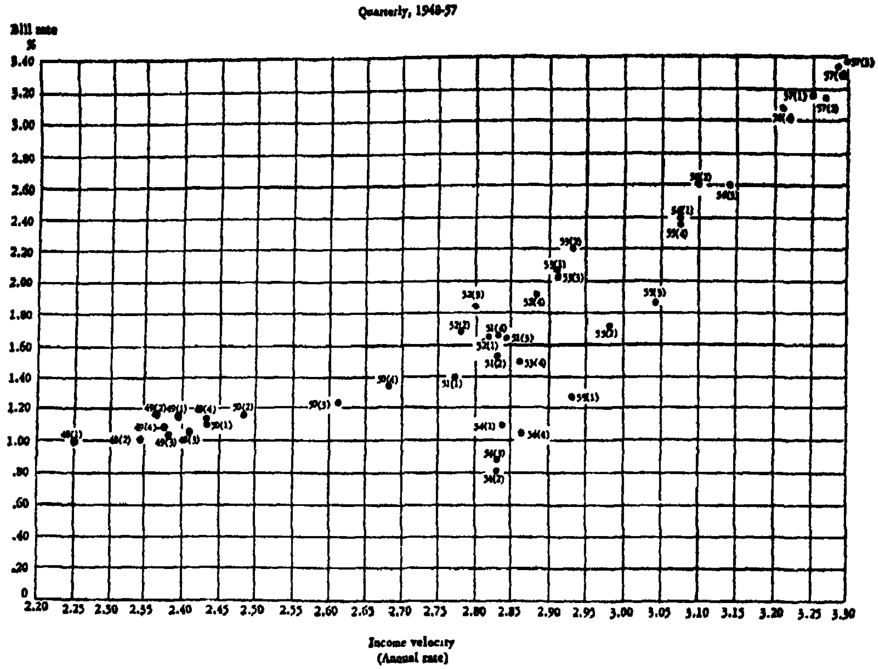
These are in broad terms the very results that one would expect on the basis of generally accepted theoretical considerations. We assume that there is a fairly constant relationship in the short run between the dollar value of GNP and holdings of "active" cash to be used for current and expected payments (essentially Keynes' M_1).[5] As GNP rises, the volume of cash required

[5] The actual ratio of active cash to GNP depends at any one time upon such generally slowly changing institutional patterns as the stage of development of the monetary and financial system, the degree of industrial integration, the distribution of income and wealth, the frequency and regularity of receipts and disbursements, etc. However, it is recognized that at high interest rates there is likely to be some interest elasticity in the demand for transactions balances. See [3, ch. 4] and [13].

CHART 3

INCOME VELOCITY AND TREASURY BILL RATE

Quarterly, 1948-57



for day-to-day household- and business-payments needs also increases; but if the money supply is held constant, the funds required to satisfy these "active" or transactions needs must be drawn from formerly "idle" holdings (M_2).[6] Interest rates thus rise in order to attract these funds, inducing owners of idle balances to part with or economize on their cash holdings. This activation of idle balances is reflected in an increase in velocity, since observed income velocity varies directly with the ratio of active balances (M_1) to the total money supply (M).[7]

Thus, while monetary policy has its immediate impact upon the banking system, its effects soon spread through the myriad of interrelationships that comprise the financial mechanism and gradually pervade other areas of eco-

[6] See [3, pp. 66-70], particularly the diagram on page 67. A more complex model is detailed by G. Horwich [5].

[7] Designating income velocity as V and assuming a fixed ratio (in the short-run) between the dollar value of GNP and M_1:

$$V = \frac{GNP}{M}$$

$$V = \frac{GNP}{M_1} \cdot \frac{M_1}{M}$$

$$V = k \cdot \frac{M_1}{M}$$

nomic activity. The process is recognizable by such familiar features as persistent pressure on bank-reserve positions, "shortages" of funds and continued tightness in the money and capital markets, a decline in bank and nonbank liquidity, an increase in the extension of "trade credit," and—last but not least—articles in the press and speeches before trade and labor groups denouncing the "tight money" policy.

It is impossible of course to distinguish active from idle dollars, except by some rather arbitrary assumptions. And it is not necessary for present purposes actually to attempt to separate them statistically, since Chart 3 adequately demonstrates the significant relationships involved. Nevertheless, it is still interesting to make the alternative statement of the above principles in terms of the dollar volume of idle balances in existence over various periods of time. As noted above, the maximum level that income velocity has reached in about the past quarter-century has been a rate of almost 3⅓ times per year (1931 and 1957), although occasionally it had previously been as high as about 4 (1919 and 1929). During mid-1957 a number of signs, including sharp increases in money rates and capital market yields, seemed to indicate that velocity was approaching close to the straining point, that the financial mechanism as presently constituted is not geared to enable it to increase very much further. There are thus some pragmatic grounds for believing that present limits to velocity are closer to an annual rate of about 3⅓ rather than the peak of 4 times per year reached in the 1920's. An income velocity of 3⅓ means, as its reciprocal, a ratio of money supply to GNP of 30 per cent.

If we assume that at an income velocity of about 3⅓ times per year funds would be turning over at close to their maximum degree of rapidity, this implies that just about all cash would then be utilized for transactions purposes, with idle balances reduced to minimum levels. We can on this basis calculate the volume of active and idle balances in various periods by assuming that a money supply equal to 30 per cent of GNP is desired for transactions purposes, and that the excess of the money supply over this amount can be isolated as idle balances.[8] The relationship between idle balances so computed and the bill rate is shown in the form of a scatter diagram in Chart 4. In this framework the 1952-53 and 1955-57 periods of restraint are characterized by decreasing idle balances and rising bill rates, and again the movement in time sequence during these periods is particularly striking. From the first quarter of 1955 to the third quarter of 1957 GNP rose by $61.3 billion, as mentioned earlier, increasing the transactions demand for cash by 30 per cent of $61.3 billion or $18.4 billion. But the money supply increased only $4 billion, so that the remaining $14.4 billion required for additional transactions balances had to be drawn from formerly idle holdings. In consequence, the bill rate rose from 1¼ per cent to 3⅝ per cent, idle balances declined from $15.7 billion to $1.3 billion, and the income velocity of the total money supply increased from 2.93 to 3.30.

[8] See the discussion of alternative procedures by Klein and the references cited therein [7, esp. pp. 298-307].

II. *Implications for Monetary Policy*

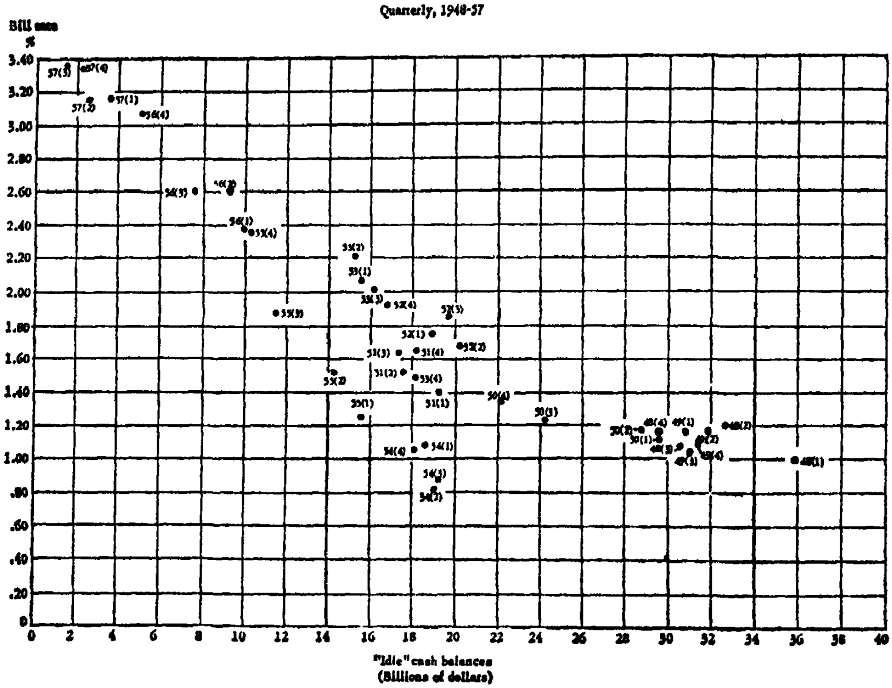
Let us now return to our original query: to what extent is a restrictive monetary policy likely to be thwarted by offsetting increases in velocity? Are there any useful features to these variations which monetary policy can utilize to its advantage?

The problems of the monetary authorities are more complex than some would picture them. In particular, they must necessarily be continuously concerned not only with maintaining economic stability in the short run, but

CHART 4

"IDLE" CASH BALANCES AND TREASURY BILL RATE

Quarterly, 1948-57



also simultaneously with allowing sufficient financial elbow room for the realization of potential real economic growth, even in periods when inflationary dangers threaten. It is not an adequate solution to check inflation by methods which also prevent desirable real growth. Furthermore, although hindsight is often characterized by a remarkable clarity, the day-to-day maintenance of economic stability is usually complicated by a considerable degree of uncertainty as to whether current economic trends are on balance inflationary or deflationary. In light of these factors, changes in velocity, rather than subverting monetary policy, become an indispensable part of that policy.

With respect to the problem of maintaining economic stability, one of

the main criticisms directed against orthodox anti-inflationary monetary policy has been that it is a very dangerous tool which cannot be used in moderation —that if effective at all, it is likely to be too drastically effective, precipitating an economic collapse through a shattering of confidence in the money and capital markets.[9] Changes in velocity, however, provide the needed safety valve, tempering and graduating the impact of monetary policy and thereby enabling the central bank to apply more restraint than it might otherwise risk. The role of velocity is thus similar to that of the discount window during a period of limited reserve availability; they both moderate the build-up of undue tightness, and the crises that might otherwise ensue, by distributing pressures and providing outlets through which strains on the payments mechanism can be partially alleviated at the initiative of the market itself.[10] Related functions are performed by the federal funds market and by many of the financing arrangements of government securities dealers, including repurchase agreements with the central bank. It is in part these very devices, of course, that enable velocity to increase.

While it is literally true that these changes in velocity "offset" changes in the supply of money, they are unlikely to do so completely if the liquidity function has an interest-elasticity less than infinity and the consumption or investment functions are at all responsive to changes in the cost or availability of funds. And the partial offset which velocity does provide gives the central bank a necessary margin of flexibility and safety, allowing it to restrain the growth of the money supply (within limits) without continuous fear that a sudden financial crisis will occur. It is noteworthy that the inflationary pressures of 1955-57 tapered off *gradually* despite the vigorous application of monetary policies during this period. In view of the usual uncertainty regarding the actual state of business conditions, it is doubtful whether the authorities would ever have the courage (or the foolhardiness) to impose any significant degree of monetary restraint were it not for the built-in shock absorber represented by variations in velocity. Increases in velocity are thus to be expected in the course of an upward movement and in a real sense are an integral part of the mechanism of monetary control, in effect being merely the other side of the squeeze on liquidity which assists in transmitting the effects of a restrictive monetary policy throughout the economy. Similarly, declines in velocity in the downward phase of the cycle allow the monetary authorities to expand the money supply more than they might otherwise think prudent, and simultaneously provide room for velocity to rise once again when the recovery gets underway. Without these fluctuations in velocity the central bank would be forever at the brink of a precipice, fearing that the slightest wrong move would bring disaster; as a result, it would be most likely to do nothing at all.

[9] See Hansen [3, pp. 161-63]. Hansen's objections (as well as those of Smith, cited in footnote 1) are primarily to the use of monetary policy *alone* to stop inflation. However, Hansen's monetary recommendation [3, p. 166] center primarily upon selective rather than general measures.

[10] Cf. P. A. Samuelson [10], and [14, pp. 12-13].

A special application of the above considerations relates to the task of stemming inflation without simultaneously halting real economic growth. In brief, the problem is to allow GNP to rise in line with potential real economic growth, but not so fast as to exceed that rate of increase and become inflationary. To permit this increase in GNP, it is obviously necessary that either M or V (or both) must increase, and if inflationary pressures are at all severe it is far less dangerous to allow the expansion in GNP to take place mainly via higher velocity rather than mainly through increasing the money supply. To allow GNP to expand through increases in velocity brings self-limiting factors into play which make it unlikely that the inflation will get out of control, while to choose the alternative path—increasing the money supply—is to lessen materially, and perhaps abandon, restraint. There is a considerable difference between both the effects and the extent of increases in velocity that represent a reaction to monetary restraint, as compared with those increases in velocity that have occurred from time to time in nations that have inflated the money supply excessively despite the presence of strong inflationary forces.

As long as idle balances exist, the desired expansion in GNP can be accomplished with a constant money supply and higher turnover; at the same time, some expenditure is choked off, an atmosphere of restraint is maintained, and the monetary authorities are able to retain close contact with market developments. Charts 3 and 4 suggest that when interest rates are low and idle balances large, a small rise in rates is likely to result in a large transfer of funds from hoards to active circulation, increasing velocity substantially. In this phase there is considerable truth to the "offset" viewpoint. But as interest rates continue to rise, due to continued monetary restraint and persistent demands for funds, idle balances are likely to approach minimum levels. Correspondingly, velocity is likely to encounter an upper limit, a rough and perhaps flexible ceiling, but a ceiling nevertheless. As it becomes increasingly difficult to obtain the release of additional funds from the now depleted idle balances, velocity will be subject to new constraints, economic activity will become increasingly sensitive to monetary policy, and further expansion of GNP will be inhibited. There is presumably some point where continued limitation of the money supply would entirely halt the growth of GNP, and perhaps initiate a downward movement. In practice, however, some additions to the money supply are likely to be occurring continuously, since the art of limiting the stock of money usually takes the form of allowing smaller increments than would otherwise take place, rather than imposing an absolute barrier to any increase. The problem thus reduces itself to the relative increase in the money supply as compared with velocity.

Again an analogy involving rediscounting is apt: providing for economic growth primarily through increased velocity rather than primarily by expanding the money supply is the more restrictive alternative in a way very similar to deliberately "forcing" the banks to obtain reserves from the discount window rather than by supplying funds through open-market purchases.

In both of the more restrictive alternatives the central bank keeps the reins taut, remaining in close contact with market conditions—which react with increasing sensitivity—while simultaneously enabling some expansion to take place.

Aggregate economic policy rarely seeks to achieve stability, but instead usually aims at "controlled" expansion. Within limits, monetary policy can make a positive contribution toward this end, in part because of—rather than in spite of—fluctuations in velocity.

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The Weeks Report Revisited

In his review of the Weeks Report [8] J. C. Nelson points out that the "Committee has not tackled some fundamental questions concerning regulation and its effects" [4, p. 917]. I would like to go further and suggest that the Presidential Advisory Committee (or Weeks) Report shows a striking lack of general economic intelligence which involves it in at least two basic inconsistencies. If the issues to be raised here were outdated there would of course be no reason to subject the Weeks Report to further scrutiny at this time. However, the basic inconsistencies continue to permeate discussions of national transportation policy to such an extent that it is important to bring them out into the open.

As is well known, increased reliance on competitive forces in transportation is the major general recommendation of the Weeks Report and one which has received fairly widespread support. It is unquestionably true that the monopoly position of the railways is much weaker than before 1920 but to argue that the *entire* transportation industry operates under the checks and balances of vigorous and pervasive competition is going a bit too far. Those who talk in these terms are moving in the direction of identification of the transport market as a whole with perfect or, at least, monopolistic competition. For example, the Weeks Report argues that the "net result [of the 'transport revolution'] is a competitive system of transportation that for all practical purposes has eliminated the monopoly element which characterized this segment of our economy some thirty years ago" [8, p. 1]. Though not going quite so far, many economists have emphasized the strength and ubiquity of competitive elements in transportation [4, p. 918] [5, pp. 26-28].

But economists have also frequently pointed out the complexities of the transport market [3, p. 83] [6, p. 245], complexities which are largely inconsistent with competitive models. Transportation service is supplied by highly diverse enterprises operating under widely different technical, economic and market conditions. The unit of output is much more complex than an alleged homogeneous ton-mile. It involves considerations of speed, flexibility, safety, and dependability, all of which differ substantially among the various media. Thus in the transport market we have naturally heterogeneous products emanating from the different competitiors and vast differences among the competitors themselves with respect to production costs (the level, structure and shape of the cost functions) and physical facilities. Depending upon the particular needs or preferences of various shippers, these differences engender vastly different elasticities of demand for the services of a particular medium in the various segments of the market, and hence varying degrees of monopoly power even on those route segments where a variety of transport forms of all types are available. But in fact both the availability of forms of transport and numbers of firms differ substantially throughout the country.

These complexities on both the supply and demand side of the various market segments render transportation a hodgepodge running the gamut from conditions of nearly perfect competition to near monopoly. To obtain

useful information on the degree of competitiveness of transportation we require elaborate information on the needs and technical alternatives of the various users of transport facilities and the available supply in particular areas. Until we know much more about these things we not only are unjustified in asserting that transportation in general is highly competitive but we cannot know how things would work out should regulation be reduced or eliminated. General statements concerning the changed nature of the transport market do not permit us to assume *ipso facto* that the outcome of greater or complete reliance upon competition will be similar to that postulated by competitive models.

Quite aside from the problems of assessing the pervasiveness and strength of competitive elements and assuming that more competition would in fact be desirable, we immediately come upon a basic inconsistency hitherto overlooked in the Weeks Report. The Report argues in favor of excess capacity in the common carrier segments of transportation in the interests of national defense [8, p. 5]. Now it is clear that if this excess capacity is held out of commercial competition no problem emerges. But this is not the tenor of the argument. Thus the aim of the Report is to have excess capacity available in the event of war, a profitable common carrier industry, and at the same time vigorous rate competition. These would not necessarily be inconsistent objectives if no rates were permitted to fall below average total cost, but the Report is clear that rates may fall as low as marginal cost (short-run or long-run?). Thus, in the interest of national defense we need excess supply and a strong common carrier industry but we cannot have both under vigorous price competition since, of course, the function of price competition is to eliminate excess supply [7]. Furthermore, since the dominant medium, railways, is subject to increasing returns, especially when excess capacity exists, rates based on marginal cost will necessarily be below average total cost. If competition is as pervasive as the Weeks Report implies, this can only result in substantial financial losses to the railways; scarcely a sensible way to maintain a strong, profitable, privately owned common carrier industry!

A second inconsistency is the policy recommendation [8, p. 11] that the Interstate Commerce Commission be permitted to prescribe just and reasonable maximum and minimum rates. A just and reasonable minimum is defined as a rate at least equal to or above "the direct ascertainable cost" and a just and reasonable maximum which the Commission can specify must exceed or equal "the full cost of performing the services to which such rates apply." In other words, the rate minimum would be marginal cost and the rate maximum would be equal to or above average total cost. Coupled with the retention of such powers by the Commission, however, is the recommendation to repeal "one of the most objectionable features of rate regulation, namely, the necessity that the Commission substitute its own judgment for that of carrier management as to 'the effect of the [proposed] rates on the movement of traffic by the carrier or carriers for which the rates are prescribed'" [8, p. 11]. Regardless of one's judgment of the merits of these recommendations the point is that they are inconsistent. That is, both the

average total cost and the marginal cost which are to guide the Commission in determining just and reasonable rates, depend upon the volume of traffic anticipated from the proposed rate change.

To require the Commission to use cost criteria independently of consideration of the amount of traffic to be gained or lost through rate changes is to ask the impossible. Clearly if by "full cost" the Report has in mind the marginal cost plus some pro rata share of fixed expenses, the Commission must make estimates of volume changes. But even with marginal cost, the volume is a significant determinant. In the first place, when considering marginal cost, the unit to be considered marginal is a function of the volume of the particular traffic offered, with the costs assignable rising as the volume rises because of the extra equipment and other expenses involved. That is, if 100 pounds per day of a certain commodity is offered, it can probably be placed in a partly filled box car in a train already made up and the additional cost incurred might be quite minor. If a carload of such a commodity is offered, an additional box car will have to be added to the train which entails greater additional cost (though not in proportion to the tonnage increment); and, finally, if the volume offered is very great perhaps a special train will have to be made up and thus additional costs are involved. The costs per 100 pounds will decline with these volume increases but more cost items become specifically assignable to the marginal units as we move from less-than-carload to carload and trainload lots.

Furthermore, the behavior of out-of-pocket cost for any traffic depends partly on the relative importance of such traffic to the total. Eastman has pointed out that "out-of-pocket expense tends to increase disproportionately as this fraction [i.e ratio of the particular traffic involved to total traffic] increases in size" [1, pp. 127-28].

There is also a time dimension which must be considered in discussions of the nature of marginal costs. If a particular kind of traffic represents a once-for-all movement, the directly assignable costs may be greater than if the traffic is offered with regularity over time. In the latter case it will be possible to develop specialized and more efficient handling of the traffic, especially if it is important to the carrier, thereby permitting certain economies in its transportation. A good example of this is the permission granted by the I.C.C. on a few occasions for a lower rate per 100 pounds for shipment in multicarload or trainload lots. Such permission has not generally been granted because it tends to favor large shippers. There is little doubt, however, that costs per 100 pounds on per ton-mile may be reduced significantly for multiple-car shipments. Indeed, the Report recognizes this when it recommends "volume rates . . . based on cost differences" [8, p. 14].

Since costs are in large part a function of volume, the I.C.C. cannot avoid considering "the effect of the [proposed] rates on the movement of traffic." The significance of this inconsistency can scarcely be over-emphasized. It underscores the extreme complexity of cost finding (both theoretical and practical) in transportation. Economists such as A. C. Pigou, Donald Wallace and J. M. Clark have done excellent work in analyzing joint and fixed costs in transportation but they have neglected, or left unresolved, many of the

analytical difficulties involved in ascertaining marginal or variable costs. These costs are, of course, intimately bound up with the nature of the transportation product (and especially its tridimensional aspect which is at least a complex compound of weight, distance and velocity) [2]—the volume offered, the regularity with which it is offered, the relative significance of the traffic, the phase of returns under which the transport firm is operating and whether or not one is concerned with short- or long-run marginal or variable costs. Until we obtain some agreement or more careful analysis of these problems we shall undoubtedly be plagued with the kind of inconsistencies manifest in the Weeks Report.

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Publication Policies of the Economic Journals

Recently this writer undertook a study of the publication policies of selected economic journals. An attempt was made to discover among other things whether or not there is a need for additional space for the publication of the research results of the ever-increasing number of economists, and what kind of reception the "virgin" contributor can expect from the editors of these journals.

A questionnaire was mailed to the editors of 30 journals which either specialized in one or more fields within economics or a substantial proportion of whose articles was of particular interest to economists. Usable answers were received from the 26 journals listed at the end of Table 1. The other 4 journals either made no response (2 in this category) or declared themselves unable to separate the economic articles from the total which they receive and publish.

The first and perhaps most outstanding discovery was that the number of manuscripts submitted was in many cases surprisingly low and the

rates of acceptance correspondingly high. An examination of Table 1 reveals that nearly half of the journals reporting accept one out of every two articles submitted while 60 per cent accept one out of every three. Furthermore, nearly half of the journals receive fewer than 100 manuscripts per year. If we confine our study to the five leading journals (*American Economic Review, Journal of Political Economy, Quarterly Journal of Economics, Review of Economics and Statistics* and *Southern Economic Journal*) which regularly publish articles in all the various subdivisions of economics, the results are

TABLE 1.—NUMBER OF MANUSCRIPTS RECEIVED AND ACCEPTED, 1957[a]

Journal	Number of Articles Received	Number Accepted	Per Cent Accepted
A	25	23	92
B	60	50	83
C	40	30	75
D	30–35	24	75
E	127	93	73
F	200	134	67
G	26	16	63
H	160	85	53
I	40	20	50
J	50	25	50
K	79	37	47
L	114	54	47
M	150	60	40
N	107	35	33
O	160	53	33
P	72	22	31
Q	117	34	29
R	71	18	25
S	120	26	22
T	180	36	20
U	n.a.	n.a.	20
V	141	27	19
W	400	72	18
X	72	12	17
Y	350	n.a.	n.a.
Z	n.a.	n.a.	20

[a] Journals included in the above table, but not in the following order, are: *Accounting Review, American Economic Review, American Journal of Economics and Sociology, Antitrust Bulletin, Business History Review, Current Economic Comment, Econometrica, Economic Development and Cultural Change, Economic Geography, Harvard Business Review, Industrial and Labor Relations Review, Inter-American Economic Affairs, Journal of American Statistical Association, Journal of Business, Journal of Economic History, Journal of Farm Economics, Journal of Finance, Journal of Marketing, Journal of Political Economy, Journal of Retailing, Land Economics, National Tax Journal, Public Utilities Fortnightly, Quarterly Journal of Economics, Review of Economics and Statistics, Southern Economic Journal.* Only four editors reported that there had been any appreciable change in these figures over the past five years, so that the above statistics appear to be fairly representative. The number of articles accepted does not necessarily correspond to the number published in 1957 due to the use, in some cases, of solicited manuscripts and the carry-over from one year to the next of some accepted manuscripts.

somewhat better. All five of these journals receive over 100 manuscripts per year and all except one have rates of acceptance between 19 and 22 per cent. Even here, however, the picture is not entirely satisfactory. The *American Economic Review,* for example, in each of the past 5 years has published between 15 and 19 per cent of the articles received. The corresponding journal of the American Political Science Association publishes no detailed report, but in 1956 the editor complained of the heavy burden of manuscripts and in the December 1957 issue reported that they were able to publish only about one out of every eight of the articles submitted. Since the *American Political Science Review* publishes 36 to 40 articles a year as compared to 18 to 22 by the *American Economic Review* it is evident, even after allowing for articles solicited by the editors, that the volume of submitted manuscripts is considerably higher for the *American Political Science Review* than for the *American Economic Review.*

These figures support the assertion of 16 editors that their problem is a shortage rather than a superabundance of worth-while articles. Only two editors reported that they sometimes were forced to reject articles which they really wished to include, and for one of these this problem was more in the nature of a cloud on the horizon than an immediate threat. A number of editors deplored the narrow range of manuscripts from which they had to choose, and two editors reported that they had been so short of worth-while material in the past year that they had been forced to write previous contributors soliciting new manuscripts. This was in addition to the number of articles regularly written on topics suggested by editorial boards. Twenty-two journals reported the number of such suggested articles (not including review articles) published each year; of these, 5 journals never had "invited" articles, 7 carry 1 or 2 of these, and 10 have 3 or more such articles per year. However, the number of manuscripts solicited has not resulted in a high degree of concentration upon a few authors. A survey of articles appearing within the past five-year period in the five leading journals referred to earlier (p. 134) revealed that there was in each case surprisingly little repetition of authors (Table 2). In fact because of the large number of articles written jointly by two or more authors, the number of authors nearly matched the number of articles for each journal. Neither of the two journals whose editors reported soliciting papers from previous contributors is represented in this table, and it is likely that the variety of authors would be somewhat narrower for some of the more specialized journals.

Two additional considerations lend support to the conclusion that the real problem is not a shortage of publication space but rather of suitable articles to fill that space. Undoubtedly a great many of the articles submitted were sent to more than one journal, and thus are counted more than once in Table 1. While few of the editors could state precisely the number of articles which they had rejected which later appeared in other journals (only 1 editor reported that his staff had actually made a study of this question within the past year), 7 editors reported seeing 10 or more articles, rejected by them, in other journals while 15 reported seeing more than one. If one includes such general comments as "some" or "a few" only 3 editors reported

no duplication. In view of the number of articles which receive repeated rejection, the amount of overlapping in Table 1 must be considerable.

The second point is that while the number of journals included in this study is large, the survey is by no means comprehensive. Not only were some interdisciplinary journals omitted because of inadequate response, but also not included were the foreign journals which frequently publish American contributions (although rarely from academic unknowns) and such publications as *The Commercial and Financial Chronicle.* Also missing were two journals which recently began publication.

While there is evidence of a general shortage of contributed articles, Table 1 indicates that the problem varies widely from journal to journal. Thus the number of articles received by journals ranged from 25 to 400 with the rate

TABLE 2.—NUMBER OF ARTICLES PUBLISHED COMPARED TO NUMBER OF CONTRIBUTORS FOR EACH OF FIVE JOURNALS, 1953–1958[a]

Journal	Number of Articles	Number of Contributors	Number of Authors Having More than One Article	Number of Authors Having More than Two Articles
A	172	165	18	6
B	167	141	30	10
C	148	153	12	—
D	136	129	12	—
E	129	123	9	1

[a] The time-period in each case is from the second issue of 1953 up to and including the first issue of 1958. Generally excluded are comments and book reviews unless they constituted full-length articles.

of acceptance varying from a low of 17 to a high of 92 per cent. For obvious reasons no identification of particular journals can be made but the material suggests the fairly safe generalization that an author's chances of having his article accepted are enhanced if he submits it to one of the journals of more limited circulation or to one of those which specializes in his field—although there are exceptions to this rule since some of the journals specializing in one field have rejection rates nearly equal to that of the *American Economic Review.*

Upon what grounds do editors most frequently reject articles? The foremost reason indicated was the belief that the rejected manuscript contributed nothing new to the field of knowledge; 23 of the editors gave this as a reason and 19 editors indicated that this was the most important and frequent reason. The second most important reason was that the article was not suitable subject matter for the journal to which it was submitted. Poor writing was the third most frequent cause for rejection, although a number of editors indicated that they tried to salvage worth-while contributions by revision whenever possible.

Turning more directly to the question of the kind of treatment which a new contributor may expect, we are able to make the following observations: The

writer who submits a manuscript will normally receive fairly prompt notice of acceptance or rejection. Twenty-three editors reported that they gave notification one way or the other within 1 to 2 months, and only 2 editors reported a time-lag of as much as 4 months or more. Judging from the present writer's admittedly limited experience, however, no news is generally good news in that journals are more likely to reject promptly than to accept promptly.

If an author's contribution is accepted, he may still expect considerable delay before publication is achieved. Ten of the journals reported lags of 7 months or more between the time of acceptance and the actual appearance in print of an article. This time-lag is not as great as might be expected, however, when one remembers that the vast majority of journals included in this survey are quarterly publications and that the press typically takes

TABLE 3.—PREFERENCE AS TO LENGTH OF ARTICLES

Length Preferred		Upper Limits as to Length	
Pages	Number of Journals	Pages	Number of Journals
1–5	1	10	2
6–10	2	20	1
11–15	9	25	1
16–20	4	30	1
21–25	4	40	1
Over 25	2	45	1
No Preference	4		

about 3 months to "produce" an issue after all of the editorial work on it has been completed. The waiting period between the time of acceptance and appearance in print can also be explained in part by the necessity felt by many editors of having authors make extensive revisions. Eighteen of the editors reported that major revisions were frequently necessary while 21 noted the frequent need for minor revisions. Only one editor declared that no revisions by the author were necessary for accepted articles.

One of the kinds of revisions frequently called for is a reduction in the unnecessary length of an article. Yet writers ordinarily need not fear that papers will be rejected because of length. While it is true that most editors prefer shorter articles, only 7 stated that they had a definite limit as to the number of pages. Of these 7, 5 reported that they published long articles in more than one instalment, the sixth said his journal did so but only on rare occasions while the seventh reported that his journal had occasionally published extremely long articles in a separate supplement. Table 3 provides a summary of the attitudes of editors with respect to length of articles.

The number of comments received upon articles varies widely between journals as well as between articles. Varying widely also is the proportion of the comments received which editors publish. Eleven journals, for example, have a policy of publishing no comments but merely make such comments available to the original author. Two editors declared themselves willing to publish as many worth-while comments as they received. This offer is

TABLE 4.—BASES FOR SELECTION OF BOOK REVIEWERS

Special knowledge of field	16
Critical ability	2
Interest in and availability for reviewing	6
Desire to spread reviewing function broadly	3
Desire to give younger reviewers an opportunity	1
Preference for staff members of university sponsoring journal	3
Membership in association	1
Lack of connection between reviewer and author	1

limited, however, by uncertainty as to their definition of "worth-while" and the fact that these same editors reported receiving few comments. One editor places a minimum length upon comments and will publish only those which are considered to be full-length contributions. Half of the editors limit the number of comments upon any particular article to one or two although 2 editors indicated they would allot more space to comments upon a paper that has aroused particular interest.

A number of considerations guide editors in their choice of book reviewers. Foremost among these, of course, is the desire to get competent people with a knowledge of the field, but also important is the problem of finding persons willing to undertake the task. Thus while in general editors prefer the services of recognized authorities in the field, the shortage of available reviewers opens the door for young scholars. Strengthening this tendency is the effort of three editors who stated that they try to get as wide a diversity of reviewers as possible. Table 4 summarizes the bases for the selection of book reviewers.

While our evidence suggests that additional publication space for economic research is not needed at present, it would be a disservice to the editors of the various journals to suggest that they are desperately seeking manuscripts of any quality. It was quite clear from their comments that most of them already receive more than enough material of dubious quality. The above information may serve, however, as encouragement to new contributors who fear that their first efforts have no chance of publication.

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The Limitations of Capital Coefficients: A Comment

In a recent issue of the *American Economic Review* R. A. Gordon [5], in attempting to throw some light on the difficulties of using an aggregate capital coefficient, was able to apply his data on capital-output relationships to a discussion of the collapse of investment in the United States during the depression of the 'thirties. His conclusions show the need for looking at the sector capital coefficients and other factors affecting the volume of investment besides the growth of output.

The interesting feature of Gordon's stimulating article is his use of a net-of-depreciation estimate of the capital stock when measuring the capital-output relationships. But once the chance of a discrepancy between annual

replacement and annual depreciation charge is recognized, the net estimate of the capital stock may no longer give an adequate representation of the relation between output and capacity. Gordon hints at the problem when he says [5, p. 321] he has ". . . touched on a number of other problems significant for growth studies: . . . and the possibility of discrepancies between depreciation and replacement; . . ."

Some years ago Domar [1] and Eisner[2] attempted to test the relationship between annual depreciation and annual replacement in order to see what modifications might be necessary in existing growth theory. Although the models contained greatly simplifying assumptions, their treatments brought out certain significant points. There is nothing to support the proposition that annual replacement equals annual depreciation.[1] The margin between the two aggregates will depend upon the real rate of growth of gross investment, the life-span of assets, and the rate at which prices are rising. Hence explanations of events on the basis of data taken from net estimates of the capital stock may be erroneous.

The question with which this paper is concerned is how far an analysis based upon the net estimates alone has to be modified when a comparison is made with information derived from gross estimates of the capital stock. Gordon's material provides an interesting framework in which to compare the relative merits of the two methods of computing the various capital coefficients.

I. *Estimates of the Gross Capital Stock*

The estimates of the gross capital stock of the United States are based upon the usual "one-hoss shay" assumption about investment, i.e., that the assets are replaced fully when they are retired at the end of the assumed length of life. The data are built up mainly from material provided in Goldsmith's volumes on savings in the United States [4]. The assumed life-spans of the various categories of assets are taken also from this source. However, it proved necessary to supplement this information with material from other compilations [3] [9] [10] [11], and in some cases interpolations had to be made between benchmark dates. After an estimate of the life-span of each type of asset was made, gross investment within the period for each category was added to get an estimate of the gross capital stock in the final year. An example may help to illustrate the approach: if the life of an asset was 10 years then the gross capital stock for the category in 1949 would be equal to all gross investment between 1940 and 1949. The gross capital stock for all assets with a life of 20 years would amount to total gross investment between 1930 and 1949. In this way the over-all capital stock was built up.[2]

[1] In discussions of capital-output relationships the appropriate definition of replacement seems to be as follows: it is the replacement of the output of one capital good with a similar output from another piece of capital equipment. The connection between capital and output is the important feature of replacement in this context and not changes in the capital value of assets.

[2] The estimates represent a rather narrow definition of the capital stock as all inventories, consumer durables, net foreign assets and the value of nonfarm land are excluded. Furthermore, certain minor items which fall within the definition of investment have been ex-

The usefulness of these estimates may be questioned because of the limited basis on which they are built. Almost unchanged asset-lives throughout the entire period and the "one-hoss shay" assumption do limit the applicability of the material, but such constraints seem to be a necessary preliminary to the derivation of statistical series. Furthermore, the same type of criticism can be directed to the net-of-depreciation estimates.

In Table 1 these estimates are shown along with figures for the gross national product for the selected years used in this paper. An interesting feature

TABLE 1.—GROSS CAPITAL STOCK AND GROSS NATIONAL PRODUCT OF THE UNITED STATES; SELECTED YEARS, 1900–1949

(billions of 1929 dollars)

Year	Gross National Product[a]	Gross Capital Stock
1900	36.3	124.9
1903	42.3	142.6
1912	53.5	206.0
1913	56.5	214.7
1923	80.2	285.7
1929	98.4	362.7
1939	97.5	395.9
1948	150.5	449.3
1949	149.2	462.8

[a] *The GNP series is taken from Gordon [5, Tables 1 and 2, pp. 309 and 311].*

is that whereas the net capital stock series increased some three times between 1900 and 1949, the gross capital stock increased nearly fourfold.

II. *Comparison of Gross and Net Coefficients*

The basis of Gordon's work is a selection of years which will provide capital-output ratios for periods of relatively full employment, though the object is really to get estimates for years when the capital stock is being used to capacity. The year 1939 does not really fulfill this requirement but, as the whole decade of the 'thirties was one of unemployment, it seems to be the most suitable one for use in the calculations.

The over-all capital-output ratios based upon both the gross and net capital stock estimates are shown in Table 2 for the selected years of roughly full employment. Comparison of the two sets does not disclose any startling difference between them; the average and marginal coefficients of the two sets also are not very different except in the period 1929 to 1939. When computed on a net basis the average capital coefficient records a fall between the two years but the gross computation shows a movement in the opposite direction. The low level of the average net capital coefficient in 1939 is hard to reconcile with the subsequent rapid rise of output during the war years. As the

cluded, such as "dealers' commissions on the sale of houses" and used-car dealers' margins. The total amount of spending on these deleted items was $1,339 millions in 1949 while total gross investment in other categories was $42,144 millions.

year 1939 does not really fulfill the requirement of a full-employment period, it would seem that the full-capacity level of the average net capital coefficient at that time would have been even lower than that actually recorded. The difficulties of interpreting this change between 1929 and 1939 are known and Gordon [5, pp. 309-10] has no alternative explanations to offer: "Of particular interest . . . , the low value of the coefficient in 1939 despite the presumed existence of considerable idle resources in that year. . . ."

TABLE 2.—CAPITAL-OUTPUT RATIOS; SELECTED YEARS, 1900–1949
(billions of 1929 dollars)

Year	Net Capital Stock Coefficients[a]				Gross Capital Stock Coefficients[b]			
	Actual (1)	Change (2)	Avg. (3)	Marg.[c] (4)	Actual (5)	Change (6)	Avg. (7)	Marg. (8)
1903	113.1	—	2.67	—	142.6	—	3.37	—
1913	162.8	49.7	2.88	3.50	214.8	72.1	3.80	5.08
1923	224.5	61.7	2.80	2.60	285.7	70.9	3.56	3.00
1929	284.8	60.3	2.89	3.31	362.2	76.5	3.68	4.20
1939	266.0	−18.3	2.73	20.89	395.9	33.7	4.06	−37.45
1949	330.7	64.7	2.22	1.25	462.8	66.9	3.10	1.29

[a] Columns 1 to 4 are from Gordon [5, p. 309].

[b] Columns 7 and 8 are calculated from columns 5 and 6 and the GNP series shown in Table 1.

[c] The marginal coefficient used in this and subsequent tables has a special meaning since it refers usually to changes in aggregates from one period to the next. A more correct term would be "incremental" but the terminology adopted by Gordon has been preserved to prevent confusion.

The difference between the gross and net estimates of the average capital coefficient in 1939 permits a comparison of the usefulness of the two methods of measuring the capital stock. In the model underlying the measurement of the capital stock in gross terms we have the assumption about "one-hoss shay" investment so that, with some depreciation over the life of assets, the ratio of annual replacement to annual depreciation will be less than unity when calculated in constant prices for a growing economy. Depreciation is a function of all past investment now operating whereas replacement is the current-price equivalent of the earlier gross investment which has just been retired. The latter concept has to be qualified owing to the possibility that technical improvements will result in the replacement of the old asset with a more productive new asset costing no more than the original one. A downturn in activity following relatively high expenditures on investment may produce a situation where annual depreciation exceeds annual gross investment and a fall in the net capital stock will be recorded. On the other hand the volume of replacement may be less than the reduced level of gross investment and the gross capital stock may continue to rise. United States experience during the 'thirties seems to have been of this pattern.

Therefore, when comparing the gross and net capital coefficients from 1929

onwards, the gross measure appears to give a more "reasonable" interpretation of events. Certainly the rise in the average gross coefficient between 1929 and 1939 suggests the existence of idle productive capacity which was to be utilized fully in the wartime period of output. Furthermore the extent of the fall in the gross and net coefficients between 1929 and 1949 differs markedly. The net average coefficient fell by over 23 per cent whereas the gross average coefficient declined only some 16 per cent.

Gordon sees nothing in the 1929 net coefficients to suggest the development of excess capacity when these are compared with coefficients for earlier times. He has one reservation. The long-run trend in the average capital-output ratio may have been downward but confirmation of this point is hampered by the lack of data for a sufficiently long period prior to the 'twenties. It might be held that the marginal net capital coefficient for 1923-29 was much above the preceding estimate, indicating a rate of growth of the net capital stock and of the average net coefficient which would lead to excess capacity. Such an interpretation seems to be far-fetched. The gross series do not provide alternative explanations and Gordon's conclusion that there is little evidence by which one might have anticipated the catastrophic downturn of the 'thirties is substantiated.

As these calculations do not help in explaining events in the 'thirties or changes in the capital coefficients, Gordon disaggregates his model. Nonfarm residential building is separated from the other components of the capital stock and an additional factor is introduced—the rate of growth of population. The reason for the choice of nonfarm housing lies in the fact that an essential item in the analysis of housing expenditure is the internal migration in the United States from farm to city. One minor difficulty hinders the treatment of the gross estimates on the same basis as Gordon's examination of the net position. He uses more recent estimates of nonfarm housing prepared by Grebler [6] as well as the familiar figures compiled by Goldsmith. The reason advanced for doing so is that Goldsmith's estimates overstate the amount of residential building expenditure at least during the 'twenties [5, p. 315, n. 16]. Yet the use of Grebler's series does not really seem to make very much difference; for this reason the comparisons between the gross and net estimates of the capital stock are made on the basis of Goldsmith's estimates of nonfarm housing expenditure.

In Table 3 the gross capital stock is split into two components—nonfarm housing and the rest—and these are compared with the number of nonfarm households and the gross national product. When the capital coefficients are re-examined in the light of these changes a different pattern is disclosed. The average housing coefficient (col. 6) shows a marked rise over the brief interval from 1923 to 1929 suggesting the development of excess capacity in the nonfarm housing sector. One can cite additional evidence to support this judgment. In the first place gross residential investment was falling off from 1927 onwards. Secondly, average expenditure per dwelling unit had been falling away since the turn of the century though this may have been a reflection of the decline in the size of families. The important aspect is the number of households rather than the size of them alone; the data in Table 3 do not indicate any long-run downtrend in the number of households.

TABLE 3.—THE RELATION OF COMPONENTS OF THE GROSS CAPITAL STOCK TO THE GNP AND NONFARM HOUSEHOLDS; SELECTED YEARS, 1900–1948

Year	Gross Capital Stock: Excl. Nonfarm Housing (1)	Gross Capital Stock: Nonfarm Housing (2)	Gross Capital Stock: GNP (3)	Nonfarm Households[a] (millions) (4)	Average Capital-Output Ratio[b] (5)	Relation of Nonfarm Housing to Nonfarm Households[c] (6)
1900	83.5	41.4	36.3	10.3	2.4	4.0
1912	144.4	61.6	53.5	14.9	2.7	4.1
1923	201.0	84.7	80.2	19.6	2.5	4.3
1929	248.4	113.8	98.4	23.1	2.5	4.9
1939	273.6	122.3	97.5	27.7	2.8	4.4
1948	317.9	131.4	150.5	34.7	2.1	3.8

[a] Number of households taken from Gordon [5, Table II, p. 311].
[b] Column 5 is from column 1 divided by column 3.
[c] Column 6 is from column 2 divided by column 4; Gordon refers to the ratio shown in this column as the "average housing coefficient." Although this terminology is a departure from the usual use of the term coefficient it will be continued in this paper to preserve comparability.

Nevertheless, our main interest is in the comparison of the gross and net coefficients. In Table 4 the average and marginal coefficients are shown for both the gross and net estimates of the capital stock. Let us look at the housing coefficients. If we accept Gordon's view that Grebler's estimates are more accurate, there is even less evidence than with Goldsmith's series on residential building to support his claim for the existence of excess capacity unless we place more reliance on two suspect series, i.e., the long-run downtrend in the average housing coefficient and a comparison of the marginal coefficients. The word "suspect" is used advisedly as there is no real evidence up to 1939 of a

TABLE 4.—COMPARISONS OF THE MARGINAL AND AVERAGE COEFFICIENTS DERIVED FROM THE GROSS AND NET CAPITAL STOCK ESTIMATES, IN 1929 PRICES

Year	Gross Capital Stock[a]				Net Capital Stock[b]					
	Capital Coefficient		Housing Coefficient		Housing Coefficient: Goldsmith		Housing Coefficient: Grebler		Capital Coefficient[c]	
	Avg. (1)	Marg. (2)	Avg. (3)	Marg. (4)	Avg. (5)	Marg. (6)	Avg. (7)	Marg. (8)	Avg. (9)	Marg. (10)
1900	2.30	—	4.0	—	3.23	—	3.50	—	1.84	—
1912	2.70	3.54	4.1	4.4	3.27	3.35	3.40	3.2	2.01	2.37
1923	2.50	2.12	4.3	4.9	3.35	3.60	3.12	2.2	1.98	1.92
1929	2.52	2.60	4.9	8.3	4.00	7.66	3.49	5.5	1.96	1.84
1939	2.80	−28.00	4.4	1.8	3.17	−0.98	2.85	−0.3	1.83	15.89
1948	2.10	0.84	3.8	1.3	2.65	0.56	2.39	0.5	1.52	0.95

[a] Columns 1 to 4 are taken from or calculated on data from Table 3.
[b] Columns 5 to 10 are based on Gordon [5, pp. 311–12].
[c] The capital coefficient refers to a relation between the capital stock, excluding nonfarm housing, and the GNP.

downtrend in the average housing coefficient while the statistics of the marginal coefficients could be changed markedly by small shifts in the original aggregates on which they are based. The main contrast between the gross and net coefficients is the greater stability of the former. Thus the fall in the average gross housing coefficients between 1929 and 1948 is much smaller both absolutely and relatively.

In the case of the other capital coefficients, excluding nonfarm housing, once again the main difference between the gross and net series is the shift in the average coefficients between 1929 and 1938; the gross measure shows an increase while the reverse holds for the net series. As there is no obvious downtrend in the average capital coefficient, gross and net, up to that time, the sharp rise in the gross average coefficient from 1929 to 1939 points to the existence of idle facilities in the latter year which were to provide the basis for the rapid expansion of production in 1941 and 1942. On the other hand, in trying to forecast events after 1929, it is difficult to find evidence in support of the argument that excess capacity was building up between 1923 and 1929. In both the gross and net series there is very little change in the average and marginal coefficients.

The discussion supports the argument that an analysis based solely upon the net series may give an erroneous picture of developments within an economy. The necessity of measuring the gross capital stock with a "one-hoss shay" assumption about the behavior of replacement makes it necessary also to hold some reservations about the data, but the treatment suggests the importance of looking at the gross as well as the net estimates of the capital stock. If usefulness in interpreting events is the sole criterion of judgment then the gross estimates do give as much information as the net ones, and in addition throw more light on some happenings than is the case with the net estimates alone.

III. *Comparative Full-Employment Models for the 'Thirties*

In view of the evidence showing the importance of nonfarm housing in the expansion of the 'twenties, Gordon sets out to discover the magnitude of the adjustment needed should the average coefficients have been kept at the 1929 level during the 'thirties. The question is asked in the following way: If there had been no prolonged depression and if output per capita had continued to grow in the 1930's at the same rate as in the period 1923-29, how much net investment would have been needed to maintain the 1929 housing and nonhousing average coefficients?

We will look at the question from the viewpoint of both gross and net investment and compare the results. Population enters into each of the main items: first, in the households which influence the housing component of investment and, secondly, through the assumption of growth of output per head. For this reason the assumptions about the rate of population increase bear heavily upon the final results. Three different rates of population growth are assumed.

Table 5, containing the calculations on the basis of net investment, is a shortened version of a table in Gordon's article except that estimates have

been made with Goldsmith's data for the nonfarm housing stock as well as from Grebler's information. There is no great difference between the results from either of these sources except in the special case where the additional nonfarm housing investment to maintain the 1923-29 marginal coefficient is calculated. The basis of the three different population estimates is straightforward: column (1) shows the actual increase recorded during the period from 1930 to 1939; column (2) assumes that population grew at the same rate per year as in the period 1925-30 and this abstracts roughly from the effects of depression upon the increase in population but allows for the drying up of immigration; and, in column (3) it is assumed that the population in-

TABLE 5.—NET INVESTMENT NEEDED IN 1930–39 TO MAINTAIN THE 1929 CAPITAL COEFFICIENTS WITH DIFFERENT RATES OF GROWTH OF POPULATION AND THE SAME RATE OF GROWTH OF OUTPUT PER HEAD AS IN 1923–29

(in 1929 prices)

	With Population Growth Actually Experienced (1)	With Population Growth Twice the Absolute Amount of 1925–1930 (2)	With Population Growth Twice the Absolute Amount of 1920–1925 (3)
A. Total required net investment based upon:			
i. Grebler's housing estimate	75.9	92.0	103.2
ii. Goldsmith's housing estimate	78.2	95.2	106.3
B. Additional housing investment required to maintain the 1929 marginal housing coefficient			
i. Grebler's estimate	9.4	12.7	14.6
ii. Goldsmith's estimate	16.8	22.7	26.0

creased by the same rate per year as between 1920 and 1925 and this abstracts from the effects of a falling off of immigration.

Gordon shows that the net saving ratio has been declining from the beginning of the century in the United States while gross savings have remained constant at about 20 to 22 per cent of gross national product. With the ratio of depreciation to gross national product rising from 9.8 per cent in 1904-13 to about 11.2 per cent in 1919-28, it would seem that, under the growth conditions postulated, net saving would have been about 8.5 per cent of the gross national product for 1930-39. This would have meant a total net saving for the decade of about $100 billions. In this case net investment under the first two assumptions would have been insufficient to absorb the estimated full-employment savings. If the 1923-29 marginal net housing coefficient had been maintained (item B in Table 5), the gap between full-employment savings and investment would have been closed except in the case of the population increase actually registered during the period from 1930 to 1939.

The implications of these calculations will be reviewed later when the same sort of calculations will be made with the gross capital stock estimates. Gordon recognizes one weakness in his argument; gross saving would have been the same in the 'thirties as in preceding decades and, given the falling net savings ratio, the proportion of depreciation allowances in the gross national product would have had to rise. Therefore additional gross investment would have been needed in the 'thirties to offset the additional gross saving in the form of these larger depreciation allowances. On this point the gross estimates should be able to throw some light as there is no reason to assume that the required gross investment would have been forthcoming.

TABLE 6.—GROSS INVESTMENT NEEDED IN 1930–39 TO MAINTAIN THE 1929 CAPITAL COEFFICIENTS WITH DIFFERENT RATES OF GROWTH OF POPULATION AND THE SAME RATE OF GROWTH OF OUTPUT PER HEAD AS IN 1923–29

(in 1929 prices)

	With Population Growth Actually Experienced (1)	With Population Growth Twice the Absolute Amount of 1925–1930 (2)	With Population Growth Twice the Absolute Amount of 1920–1925 (3)
A. Assumed population in 1939 (millions)	130.9	136.3	140.5
B. Required increase in gross nonhousing stock to maintain 1929 average coefficient[a]	76.3	89.7	100.0
C. Assumed number of nonfarm households	27.7	29.3	30.2
D. Required increase in gross housing stock to maintain 1929 average coefficient[b]	22.5	30.4	34.8
E. Total increase in the gross capital stock (B+D)	98.8	120.1	134.8
F. Replacement falling due in 1930–39:[c]			
1. Nonfarm housing	8.2	8.2	8.2
2. Other	59.7	59.7	59.7
G. Total gross investment in 1930–39 to maintain 1929 average coefficients (E+F)	166.7	188.0	202.7
H. Additional increase in the gross capital stock to maintain the 1929 marginal housing coefficient[d]	15.6	21.1	24.1

[a] The coefficient used in line B is 2.52 from Table 4.

[b] The coefficient used in line D is 4.9 from Table 4.

[c] The replacement series is taken from the same sources as our data for the capital stock estimates discussed in Section II. A small error in this series arises as some replacement in the latter years of the decade would represent gross investment in earlier years. This follows from the fact that some asset lives are less than 10 years. As the replacement series used in the table is based upon actual investment whereas we are treating the investment sufficient to absorb full-employment savings, the estimates of replacement shown may be understated. The amount cannot be large since the estimate of total actual replacement falling due was $67.9 billions and of this $2.2 billions was part of the actual gross investment between 1930 and 1939. As actual gross investment in the period from 1930 to 1939 was $101.5 billions compared with our estimates ranging from $167 to $203 billions, the possible error arising from this source would be only $1 to $2 billions.

[d] The estimate in line H is built up from the difference in the marginal and average coefficients, 8.3 minus 4.9, in Table 4.

In Table 6 the estimates are set out showing gross investment needed in the period 1930 to 1939 to maintain the 1929 average capital coefficients. The first part of the table follows the pattern developed by Gordon but we have to include the amount of replacement which has to be added to the estimates of the rise in the gross capital stock before arriving at an estimate of total gross investment over the ten years from 1930 to 1939. The results in item G have to be compared with assumed gross savings of between 20 and 22 per cent of the gross national product. Given the annual rates of growth of population and output per head, we would have an estimated gross national product for the decade of, in column 1, $1,140 billions, in column 2, $1,170 billions, and in column 3, $1,190 billions. Total gross investment would at no time have been sufficient to absorb the estimated full-employment level of gross savings even allowing for the maintenance of the 1923-29 *marginal* housing coefficient. In fact the gross investment sufficient to maintain the 1929 average gross coefficients equals some 15 to 16 per cent of the gross national product. The margin between the estimates of full-employment gross savings and the actual gross investment required to maintain the 1929 average gross coefficients has disclosed an adjustment problem which could not be appreciated from the net calculations.

Our main interest is in the much different answer obtained when the problem is reconsidered in the light of the estimates of the gross capital stock. While the net estimates suggest that if population growth in the 'thirties had been much the same as in the 'twenties the task of reconstruction would have been negligible, there is no such comfort in the gross estimates.

Admittedly Gordon does hint at the possibility of this large difference but the magnitude of the variation cannot be gauged from his net estimates. It is disguised partly by his choice of a falling proportion of net savings in the gross national product at the same time as gross savings are held constant. The estimates disclosed in Table 5 would have been interpreted differently if the net savings ratio had been held at 10 per cent of the gross national product. However, Gordon was trying to assess long-run trends and his error emphasizes the limitations of relying upon one set of data when analyzing the development of the economy. Another approach illustrates the inadequacy even more strikingly. The actual amount of replacement required between 1930 and 1939 was about $68 billions but the total amount of depreciation during the period was between $90 and $100 billions on the basis of Gordon's net estimates. In short, productive capacity would have expanded by up to 25 per cent more than one would have anticipated from using the net estimates.

Looking specifically at the interpretation of events in the 'twenties and 'thirties, one finds that the gross estimates do not seriously weaken Gordon's conclusion that the boom of the 'twenties rested heavily upon an expansion of residential building. Where the interpretation differs is in the size of the adjustment which would have been necessary if full employment was to be continued in the 'thirties. The gross saving ratio may have had to fall by as much as a quarter since the scope for offsetting changes in the rate of growth of output was most limited; the estimated rate of growth—2 per cent per head—was above the long-term average. The essence of the analysis is the dis-

closure of the lack of clarity surrounding the use of any single concept of capital.

IV. *Disaggregation and the Sector Capital Coefficients*

While the division between housing and the other components of the capital stock does bring out certain relationships, the apparent stability of the non-housing average capital coefficient may disguise equally significant disturbances in much the same way as Gordon shows the inadequacy of the over-all capital coefficient. The main object of the earlier sections has been the comparison of gross and net series, but the aim here is to test the effect of further disaggregation by breaking down the gross capital stock, other than the non-farm housing group, into a number of sectors and relating these to some measure of output. As the available data on output is of limited reliability, the usefulness and accuracy of the actual figures found for these sector capital coefficients should not be overrated. Our interest is in the proportionate roles and general pattern of change in each sector. We do know that output attributable to the farm sector has been a declining proportion of the gross national product [8, pp. 326-27]. Information is also available on the shares of selected industries in the net national product from 1869 to 1948. These have been used to find annual estimates of the share of the farm sector in the gross national product by simple linear interpolation between the benchwork dates [7, p. 102, Table 17]. Rather than attempt an estimate of the output for each sector, only farm capital stock is related to farm output, while the

TABLE 7.—RELATION BETWEEN INDUSTRIAL GROSS CAPITAL STOCK AND GROSS NATIONAL PRODUCT LESS FARM OUTPUT

(in 1929 prices)

	1900	1912	1923	1929	1939	1948
1. GNP less farm output						
a. Total	30.2	46.3	71.6	88.1	89.3	140.6
b. Change	—	16.1	25.3	16.5	1.3	51.3
2. Industrial equipment stock						
a. Total	19.6	36.0	53.7	65.9	63.3	83.8
b. Change	—	16.4	17.7	12.2	−2.6	20.5
3. Industrial buildings stock						
a. Total	37.5	63.3	85.9	106.6	111.0	112.4
b. Change	—	25.8	21.4	20.7	4.4	1.4
4. Equipment-output ratio						
a. Gross average coefficient	.65	.78	.75	.75	.71	.60
b. Gross marginal coefficient	—	1.02	.70	.74	−2.17	.40
5. Buildings-output ratio						
a. Gross average coefficient	1.24	1.37	1.20	1.21	1.25	.80
b. Gross marginal coefficient	—	1.60	.85	1.26	3.67	.03
6. Ratio of equipment to building stock (2a/3a)	.52	.57	.63	.62	.57	.75

TABLE 8.—RELATION BETWEEN FARM CAPITAL STOCK AND FARM OUTPUT AND ADMINISTRATIVE CAPITAL STOCK AND GROSS NATIONAL PRODUCT

(in 1929 prices)

	1900	1912	1923	1929	1939	1948
1. Farm equipment-output ratio						
a. Gross average coefficient	.63	.88	.85	.69	.78	1.30
b. Gross marginal coefficient	—	2.28	.68	−.07	.35	3.73
2. Farm buildings-output ratio						
a. Gross average coefficient	1.96	2.30	2.44	2.20	2.70	2.45
b. Gross marginal coefficient	—	4.25	3.11	1.01	.25	1.24
3. Administrative capital-GNP ratio						
a. Gross average coefficient	.29	.42	.41	.48	.73	.56
b. Gross marginal coefficient	—	.68	.41	.77	−27.08	.26

industrial capital stock is related to gross national product less the output of the farm sector, and the administrative capital stock is related to gross national product.[8]

The capital coefficients for the industrial gross capital stock are examined in Table 7. The equipment sector is remarkably stable indicating a ready adjustment of equipment to output; this is not surprising considering the short life-span of this type of good. A noticeable feature is the fall in capacity, as measured by the average coefficient, between 1929 and 1939 in the equipment stock. This contrasts with the results shown in Table 4 where the gross average coefficient, excluding nonfarm housing, rose between 1929 and 1939. The other surprising feature of the table is the very small rise in the gross industrial buildings stock after 1929. The effects of twenty years of depression and war show up particularly well in this sector. In the final line of Table 7 a ratio of equipment to building stock is calculated. From 1900 to 1923 this ratio shows a steady rise, then stability between 1923 and 1929, a falling off to 1939, and then a rapid rise to 1948. The 1948 ratio of .75 was about the "right" relationship on an extrapolated trend of the 1900-23 ratio. The fact that the ratio of equipment to building stock was abnormally low in the 'twenties may indicate a further factor contributing to the breakdown in 1929. Given that the trend is significant, the ratio of equipment to buildings should have been about .67 in 1929. It would seem that industrial buildings were erected at a rate in excess of the requirements set by output at that time. Although the evidence no more than scratches the surface, the excess capacity in nonfarm housing appears to have been duplicated in the industrial building sphere by 1929.

The two remaining groups confirm the possibilities of variation in the capital coefficients. In Table 8 one can see the great differences from the over-all capital coefficients. The large rise in the average capital coefficient for farm

[8] The administrative group comprises all capital works by government and their agencies, other than the Reconstruction Finance Corporation expenditures on civilian plant and equipment, and spending on capital works by nonprofit institutions.

equipment may reflect an erroneous measure of the share of farm output in the gross national product in the postwar years. The administrative sector records a steady rise temporarily offset by the effects of war. Government expenditures during the depression accelerated this upward trend. This aspect stresses a major difficulty in the interpretation of over-all capital coefficients. In Tables 2 and 4 it was thought that the increase in the average gross coefficient between 1929 and 1939 gave a more reasonable interpretation of the situation as it helped explain the sharp rise in output during the early war years. Yet the rise in the over-all gross average coefficient was taken up largely by the increase in the average coefficient for the administrative sector.[4] Although some types of governmental capital expenditure may provide important external economies for industry, an expansion cannot be looked upon in the same way as a rise in the stock of industrial equipment when explaining a rapid rise in the output of an economy.

Objections to the expression of sector capital coefficients in this way may be serious but the alternatives shown throughout the paper provide some means of checking the individual estimates. The advantages stemming from a splitting of the aggregate capital coefficients are a removal of some conjecture when interpreting over-all calculations and a better assessment of changes in productive capacity.

V. *Concluding Comments*

There are different measures of the capital stock permitting the derivation of markedly different answers in any relation or function incorporating capital. Although our particular estimates of the gross or net capital stock are based upon fairly rigid assumptions about replacement and depreciation, their diversity illustrates the practical limits in applying any concept of capital. Thus by using either one of the series we may get answers which do not give an accurate description of economic behavior. If the disparity between replacement and depreciation is recognized, the gross estimates are more likely to be useful than the net estimates. When the capital stock is broken down into its major components and related to some measures of output, the question of a meaningful interpretation of capital estimates becomes even more complex. No good purpose is served by relying upon any one set of estimates of the capital stock.

W. P. Hogan*

[4] The increase in the over-all gross average capital coefficient between 1929 and 1939 was .38. The rise recorded for the administrative sector was .25. Other changes were: industrial equipment —.02, industrial buildings .06, farm equipment and buildings together registered —.01, and nonfarm housing .10.

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BOOK REVIEWS

General Economics; Methodology

Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik. Edited by HEINZ-DIETRICH ORTLIEB. Tübingen: J. C. B. Mohr (Paul Siebeck), 1958. Pp. 263. DM 18,00.

This is the third volume in a series of yearbooks sponsored by the Akademie für Gemeinwirtschaft, Hamburg. As the editor states, the purpose of these yearbooks is to offer busy graduates of the social sciences a survey of new developments in their fields which they might find useful for their professional practice as managers and administrators.

The first part of the present volume contains ten papers on a wide range of subjects. A general introduction is provided by the translation of Joseph Schumpeter's presidential address on *Wissenschaft und Ideologie* (Science and Ideology), delivered at the 1948 meetings of the American Economic Association. The remaining papers give a good cross-section of current academic thought in Germany. Siegfried Landshut interprets the historical background of *Menschenrechte* (human rights), as codified by the United Nations and a majority of modern constitutions. Martin Lohmann, in a stimulating article on *Die westdeutschen Investitionen und ihre soziale Problematik* (West German Investments and their Social Implications), suggests a revision of investment theory on the basis of experiences gained in a decade of German investment policy. Bruno Molitor propounds the *Soziale Marktwirtschaft* (Social Market-Economy), a concept of social policy developed by the German school of Neo-Liberalism. Ralf Dahrendorf contributes *Zu einer Theorie des sozialen Konflikts* (Toward a Theory of Social Conflict) in which he attempts to articulate a systematic theory of conflict between organized interest groups. Heinrich Popitz publishes his inaugural address *Zum Begriff der Klassengesellschaft* (On the Concept of Class Society), an empirical survey of the ideas 600 German workers had about their society. Erik Boettcher's *Dezentralisierung und Rationalisierung in der Sowjetunion* (Decentralization and Rationalization in the Soviet Union) evaluates recent Soviet economic reforms which are interpreted to have introduced market elements into Russian interindustry relations to cope with shortages in the supply of manpower. Eberhard Witte's *Vertretung des öffentlichen Interesses in der privaten Unternehnung* (Representation of Public Interest in Private Enterprise) defines the term "public interest" in German corporation law. Karl-Hermann Capelle contributes *Zur Problematik der Allgemeinen Geschäftsbedingungen* (On the Problem of General Trade Terms) in which he distinguishes between use and abuse of contract clauses in the "self-made law of commerce." Finally, concern about the political future of underdeveloped countries is expressed in Erwin Hasselmann's *Gedanken über genossenschaftliche Selbsthilfe und Fremdhilfe in den Entwicklungsländern* (Thoughts on the Cooperative Movement in Developing Countries), an appraisal of the role international cooperative assistance might play in the social and economic development of "third areas."

The second part of the *Jahrbuch* offers some major reviews and interpretations of books—mostly American—widely discussed in recent German literature. Gisbert Rittig reviews Sweezy's *Theory of Capitalist Development* and Heinz Kluth reviews Riesman's *The Lonely Crowd,* both now translated into German. Bernhard Grossmann reviews *Oriental Despotism* by Wittfogel whose earlier work on the economy and society of China (published in Germany 1931) is receiving new attention as Chinese Communism has become "the biggest and by far the most formidable mass movement in human history." A large number of recent publications on *Entwicklungsprobleme unentwickelter Länder* (Development Problems of Underdeveloped Countries) is reviewed by Peter Meyer-Dohm. Alfred Christmann, in a report on *Macht und Verantwortung in der "klassischen" und "befestigten" Gewerkschaft* (Power and Responsibility in the "Classic" and "Established" Trade Union), reviews recent translations of Briefs' and Tannenbaum's books on the labor movement. Bruno Molitor discusses Slichter's concept of *Creeping Inflation,* a topic of special concern to inflation-conscious German economists. Finally, Egon Tuchtfeldt reviews official documents on *Der Gemeinsame Markt* (The Common Market) to appraise principles and problems of the European Economic Community.

The *Jahrbuch* thus lives up to its stated objective of summarizing for the German "man of affairs" recent contributions to scholarly literature and is a convenient means of acquainting the American reader with current German thinking on economic problems. As stated by a reviewer in the *Revue Française de Science Politique:* Il n'y a pas trop de "Jahrbücher" s'ils doivent tous ressembler à celui-ci.

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Economics: An Analytical Approach. By RALPH K. DAVIDSON, VERNON L. SMITH, and JAY W. WILEY. Homewood, Ill.: Richard D. Irwin, 1958. Pp. xviii, 393. $7.00.

The authors wrote this introductory textbook mainly for students of the pure and applied physical sciences. They assumed that this large and growing group of readers could grasp economics more readily and firmly if it corresponded in method and spirit to the work undertaken in science courses. To this end the book contains more mathematics than beginning texts customarily include. Furthermore the examples were picked with the academic personality of the engineer or chemist in mind. In other ways too, the tone resembles that of a book in the physical sciences.

The quality and quantity of preparation in mathematics which a reader would need lie well within the attainments of typical science students. This restraint in the employment of mathematics is wise since it would be easy to overestimate the abilities of students to use their mathematics outside the subjects in which they originally applied them. The authors hope that many students besides those in the physical sciences will also find this special approach valuable. Unquestionably all students commencing the study of economics equipped with the minimum skill in mathematics desirable for them to have would profit greatly by this sort of introduction to economics. Even

if they had a much lower level of mathematical facility they could easily comprehend all but a very small part of the book. There are employed, for example, over 100 graphs, most of which contain only the kind of mathematics long found understandable by a wide range of beginners in economics.

In comparison with other texts this book is short. The authors limited its scope, as the title indicates, to subjects which they could treat by "an analytical approach." They consequently excluded all history and most description. The descriptive passages that remain occur most often in the discussions of money and banking, business organization, international trade, and economic development. Some largely nonanalytic topics usually found in beginning economics are absent, *e.g.*, labor, public finance, and economic systems. A book of this length must even abridge the part of economics generally counted as analytical. For instance, often extensive topics, such as consumer preference or the different models of markets with intermixtures of competition and monopoly, receive a quite brief coverage.

The book opens with several elementary chapters on microeconomics and closes with four more that apply the same method to more intricate cases. These chapters interpret in detail the operation of the price system mainly by means of the well-known and professionally approved partial equilibrium models. It is pleasant to find included an attempt at that pedagogically difficult task, a compact and nonmathematical interpretation of the general equilibrium. The middle chapters, besides containing the descriptive divisions mentioned above, offer the student a macroeconomic summary of the economic problem. This summary begins with a consideration of national income, proceeds to a simple Keynesian model to explain the conceivable causes of changes in income, and ends with a study of business cycles and countercyclical policy.

As is proper in any classroom text, the authors have restricted their exposition to the most basic and least controversial parts of the subjects they selected. It is impossible to disagree with their reasoning without either being at odds with the opinions evidently held by most economists, or without inappropriately enlarging upon secondary points. The book well reflects the consensus of up-to-date opinion on what is fundamental in economic theory. In doing so it reveals the very recent origin of current textbook economics, for a large fraction of the topics examined was not found in the textbook of twenty years ago and a small part was not even in the specialized literature of that time. These modern essentials of analytic economics are explained concisely and clearly in a manner that should satisfy both the student and the instructor.

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Principles of Economics. By Henry Grayson and Philipp H. Lohman. New York: American Book Co., 1958. Pp. xviii, 691. $7.00.

This text, designed for use in the first college course in economics, is not a revolutionary departure from several of those widely used in this field. The declared objectives of the authors are an appropriate integration of empirical material and theoretical analysis, together with a proper perspective of the

discipline of economics within the area of the social sciences. These objectives have been quite well accomplished. In most respects the treatment is both broad enough in its coverage to meet the needs of those students for whom the first economics course is a terminal one and at the same time it is sufficiently thorough to establish the necessary foundation for other students who may take additional work in the subject.

In Part I, something over 100 pages, the student is introduced to basic definitions and concepts. Part II deals with money and banking, taxation, and the volume of governmental spending. National income determination, business fluctuations, governmental measures to promote economic stabilization, and the economics of war are presented in Part III. These three divisions together make up slightly more than half the book. Part IV contains the theory of the firm, price determination, and a chapter on agriculture. Functional and size distribution of incomes and a description of the structure, history, and legal regulation of labor organizations are incorporated in Part V. Finally, under the heading "The World Economy" there is an examination of international economics, economic development of underdeveloped areas, and conditions for economic growth. For each chapter there are questions for review, questions for application of the material presented in the chapter and selected readings. Included at the end of the book are a glossary of terms as well as a supplementary bibliography.

In introducing the student to a field of study, definitions and working concepts may be introduced at the beginning of the course so that the student quite early has at hand the tools he will rely upon in later analysis, or alternatively definitions and concepts may be introduced throughout the course of study as they are needed for immediate application. The former procedure is adopted here. Although the treatment of subject matter is generally satisfactory, some questions as to sequence and content should be raised. Comparative economic systems is taken up in Chapter 2 although the student at this point has little basis for a grasp of the nature of the issues involved, even less for critical understanding of them. Absent entirely from the book is a description of any form of insurance or of the social security system. There are a number of references to governmental operation as it affects specific economic activities, but there is no systematic presentation of the interrelationship between government, in its different economic aspects, and the capitalist system. Also, some economic policy suggestions are made rather uncritically. For instance, the suggestion that to attain economic stability in a private-enterprise system large business units might well be relied upon to administer the economy for the benefit of small business, labor and the consumer may be sharply questioned on several grounds. On a different plane, there is incomplete labeling of some graphs.

In spite of these critical comments, this book has real merit as a beginning textbook. Rather more attention is given to the place of economics within the general area of the social sciences than is found in many other texts. It is written at a suitable level and is generally clear, accurate, and interesting to read. With the exceptions noted above, the coverage is good, including recent developments in economic analysis which can be usefully handled at the be-

ginning level. The presentation is competent and so arranged that it may be adapted for use in either a one- or two-semester course.

VANCE Q. ALVIS

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Intermediate Economic Theory. By JOSEPH P. McKENNA. New York: Henry Holt (Dryden Press), 1958. Pp. xiv, 319. $4.90.

In the preface to this book, the author says that: "One of the most regrettable changes in the study of economics is the shift in emphasis from political economy to economics." Further he states that ". . . I have tried to emphasize the role of economic theory as a guide to policy." This ambitious objective, however, is not attained in the book. In fact, there is some measure of disappointment.

If one seeks a simplified and somewhat clear and brief statement of some basic and generally accepted tools of economic analysis, these are presented in an adequate manner in most instances. The ". . . integration of value theory and distribution theory" is noted by the author as one of his principal pedagogic innovations. This seems to be a somewhat naive claim. (The reviewer in a principles book co-authored with Fairchild and Buck several years ago in discussing the rates for the agents of production indicated that these were based upon market demand and supply forces.) Most teachers and students of economics have long looked upon the forces determining the worth of the agents of production as but one manifestation of the typical value problem—only with the nature of the demand and supply forces being of a different structure. Indeed, no new trail is blazed here. What we have is a valuation problem that is different only in kind not degree nor technique.

So far as individual topics, the author treats these generally in a rather clear, although often superficial manner. A somewhat general failing is that many of the items discussed seem to be thrown together without an underlying theme or thread by means of which the student can develop a framework of analysis. The author divides his book into five major parts—the firm, the household, the market, the society, and the future—and all of these within a compass of some 300 pages. The ambitious undertaking falls short of fulfilling a need for a well-presented, integrated textbook in the field of intermediate economic theory. For example, the entire analysis of costs, revenue, and output, the supply of products and the demand for factors is accomplished in the short space of approximately 100 pages.

For the student who has had a good background in basic elementary economics there is little that is new or trail-blazing here. A quick glance at established elementary economics textbooks (Samuelson, Morgan, Bach, Harris, or Fairchild, *et al.*) shows a more intensive and deeper analytical coverage—more challenging to the student—of substantially all of the topics discussed by the author. There are, to be sure, some variations. For example, the author presents a sound argument for the use of the concept of opportunity costs as the basis for managerial supply decisions and the use of the marginal cost curve in lieu of the more traditional supply schedule curve.

The discussion of demand, its elasticity, the measurement of elasticity, and

the use to be made of average, marginal, and total quantities is all quite elementary and should be familiar to the student before he reaches the study of intermediate theory. If review of these concepts is necessary background, then the author should have carried his analysis further in many instances. In fact, one of the general failings of the book is that the foundations for economic analysis are usually presented in a superficial manner. The concept is introduced, an elementary presentation of the author's own approach follows, and this usually ends the discussion. One waits for the integration into public policy, but finds in most cases that this consists of a few pages at the end of a chapter, not tied into the basic body of thought, but presented more or less as an afterthought and moral judgment.

The discussion of choice of units in Chapter 3 is enlightening and somewhat different, but again the author does little more than present the problem. Chapter 4 on linear processes probably constitutes one of the author's major contributions. In Part II there is a clear, although again elementary, analysis of consumer choice, especially of utility and indifference. Part III deals with the market and presents a series of topics, but with little integration, purpose, or relationship indicated. Standard topics are treated in a generally standard and elementary manner—pure competition, monopoly, monopolistic competition, oligopoly, and the like. Another of the highlight chapters is 14, concerned with the general and with aggregate analysis. Good use is made of the input-output table for the United States for 1947. A clear and simple description of consumption, savings, and investment follows.

If the author does meet his objective it is in the last two chapters where he presents some of the analysis of national income from a public-policy viewpoint and considers stability, change, and progress. One refreshing note about the book is the fact that the author presents no mathematical excursions that are not clearly described in the text. The few uses made of quantitative analysis are clear and readily understood.

In spite of the elementary level at which the book is pitched, the reviewer finds it a book that could serve well as a guide or manual to the intermediate student who finds traditional economic theory too complex.

REUBEN E. SLESINGER

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A New Prospect of Economics. Edited by G. L. S. SHACKLE. Liverpool: Liverpool University Press, 1958. Pp. xiv, 498. 30s.

This is an introductory text authored by members of the department of economics and commerce at the University of Liverpool and designed and organized by G. L. S. Shackle. Within its 29 chapters it contains, with certain exceptions, the essence of introductory economic analysis as written by competent persons. Shackle has contributed a foreword and three introductory chapters on "Scope, Method, and Tools." The unique feature is the book's reversion to the older tradition of presenting early in the analysis the theory of value and distribution, which Shackle believes to be "logically prior to, and more fundamental than, the superficial pattern of money income and expenditure flows in an enterprise economy." The remaining chapters treat, though

sometimes in unfamiliar order, the familiar topics—theories and functions of money; the Keynesian employment analysis; growth; social accounting; market practices relative to firms, products, and labor; international trade; and the role of government.

In view of Shackle's earlier rather strong views with regard to basic economic theory and methodology (his *Time in Economics* and *Expectations in Economics* aroused extensive debate over the subjectivist approach to economic analysis and decision-making), the reader turns to this text with "potential" enthusiasm. How did Shackle (or did he?) apply his views in arranging a basic principles book? How did he reconcile his subjective approach with the more mechanical equilibrium and probability notions he earlier criticized, and which are basic to much of maximization analysis? He had, for example, sternly berated the concept of the stationary state, and the lack of realism in abstract theory. He had considered the traditional business cycle treatment, including the multiplier and acceleration concepts, wooden and mechanical, because they omitted vital subjective elements. Does the *New Prospect* reflect these views?

The answer has to be that there is little evidence of any impact of Shackle's earlier views upon the treatment of the subject matter in the text. Throughout the book, the stationary, static, mechanical, elegant abstractions are there in full dress. However, business cycle theories have been omitted altogether in favor of a very thorough treatment of Keynesian employment theory. The most uniquely Shackle feature of the *New Prospect*, then, may be in its giving top priority in sequence and space to an analysis of marginal choice—of consumers, producers, factor owners—as an important contributing element in value determination. The exposition on marginalism, however, is traditional—much like Wicksteed's—though with the indifference technique incorporated in consumer theory.

The organizational arrangement of topics and the treatment of some of them are, however, debatable. Several chapters (Chapter 3 on mathematical tools, 17 on social accounting, 27 on statistical sources) seem awkwardly unintegrated, the latter two using only British material. Competitive and noncompetitive firm theory are 12 chapters apart, giving a false impression of their separateness. The chapter on growth and the sections on international trade and government are disappointingly old-fashioned, sketchy, poorly designed to motivate the student, or lacking in coverage of vital facets of these subjects. There is only the barest reference to economic development. The institutional treatment of labor organization and its impact on society are hardly mentioned.

At the elementary level, it is seldom a question of the validity of the treatment of topics, but of their order, the inclusiveness of the presentation and the impact upon the student. It is not sufficient in an introductory text for competent persons simply to discourse fluently on various topics without giving special attention to the motivation of the student, emphasis, and coordination of subject-matter by appropriate use of headings, charts, summaries, questions, etc.

For its reversion to the traditional value and distribution attack on the

subject, which may be quite warranted by the continued near full-employment conditions of modern times, and for the logical fluency of the exposition, the text deserves commendation. There is, moreover, plenty here to challenge and interest. The sparseness in certain areas, and the absence of concern with motivation detract from what is basically a sound and innovative approach.

RICHARD J. WARD

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Price and Allocation Theory; Income and Employment Theory; Related Empirical Studies; History of Economic Thought

Oligopolio e progresso tecnico. By PAOLO SYLOS LABINI. Publicazioni della Facoltà di economia e commercio dell' Università di Roma, Vol. V. Milan: Giuffrè, 1957. Pp. iv, 207. L. 1000.

Paolo Sylos Labini is an outstanding member of the postwar generation of Italian economists. His book *Oligopolio e progresso tecnico* (Oligopoly and Technical Progress) is a work in economic theory which English-speaking economists could read with profit. The volume has two somewhat less than perfectly integrated parts, which can loosely be described as the microeconomic and the macroeconomic.

The first half of the book constitutes a contribution to the theory of oligopoly price-determination. Sylos' basic hypotheses are that oligopoly markets dominate modern economies, and that their form is typically that of "concentrated oligopoly," involving a few large firms, together with a "fringe" of small ones, perhaps a few of intermediate size. Essentially, he suggests, these firms—large, medium, and small—employ distinctive technologies, with the large firms typically much more highly mechanized, and having distinctly lower unit direct costs. Unit direct costs are roughly constant for each type of firm up to a capacity limit.

Sylos' thesis supplies content to the kinked-demand-curve and full-cost-pricing approaches to oligopoly price. The kinked-demand hypothesis explains why oligopolistic firms tend to perpetuate a price once established. But what price will this be? The full-cost principle suggests that generalized changes in cost tend to give rise to proportional changes in selling price, preserving the former margin or mark-up. But what determines the size of the mark-up that is so protected?

The author suggests that equilibrium price in concentrated oliogopoly is determined essentially by the nature and location of the discontinuities of cost levels among firms of different sizes (using different techniques). The dominant, "price-making" firms choose from among price levels that will put or keep a given competitor or group of small competitors (who are "price-takers") out of the market, or keep them from expanding their shares. The cost discontinuities mean that only a few prices out of the whole range of possible ones are candidates for consideration. Each of these possible equilibrium prices is surrounded on both sides by the instability involved either in price wars or in the entry or expansion of competitors. Which price among the several possibilities is chosen is partly a matter of calculation and partly of

history. Given the cost levels and capacities of plants of the various types, the level of the equilibrium price is also affected by the size of the market, the elasticity of market demand, and the level of factor prices. However, fluctuations in the level of demand (other than permanent growth in the size of the market) or in its elasticity will ordinarily not affect the level of equilibrium price.

Once price achieves equilibrium, in a market of concentrated oligopoly, a generalized change in the level of costs displaces the equilibrium, he shows, in rough proportion to the change in cost. An initial adjustment in proportion to cost-change (with a possible further minor correction) will restore the previous market equilibrium; acceptance of the mark-up formula thus avoids the instability of price wars or the destabilizing effect of new entry.

The transition to the macroeconomic analysis rests on several further propositions. One is that technological progress, which is assumed to reduce costs primarily for the large firms using advanced technology, tends therefore to raise the average mark-up over direct cost, creating extra profits. These profits become the target for wage demands from strong unions, which are not strongly resisted by the large firms, for they raise the cost base of all firms, small as well as large, and permit the raising of prices to compensate. Technological gains tend, thus, not to be passed along in lower prices, but to be retained in the industries of their origin either as higher profits or higher wages or both.

There is not room to develop the essence of the author's macroeconomic argument. As opposed to the diffusion of the fruits of technological progress through lower prices that would occur under competition, oligopolistic price rigidity tends to reduce aggregate demand or to prevent sufficient rise to absorb the workers displaced by technological change, which is characteristically labor-saving in its initial impact. The reviewer found parts of the macroeconomic argument imperfect. Nevertheless, the conclusions are stimulating and may be more correct than some of the argument which supports them.

Sylos Labini is widely familiar with the literature in these areas, and makes effective use of it. He is Schumpeterian rather than Keynesian in basic macroeconomic approach, although he agrees that Keynes was essentially correct (in some respects), but for the wrong reasons. In particular, he agrees that government stimulus to aggregate demand will be required to avoid stagnation and technological unemployment in a technically progressive oligopolistic economy. Little or nothing can be done to attack oligopoly directly, for it is an inevitable concomitant of modern technology.

Interestingly, there is not a word to indicate whether or to what extent the author thinks that his analysis is relevant to the permanent or "structural" unemployment of his own country, which has kept 10 to 15 per cent of the labor force without jobs during the entire postwar period. Hardly any Italian economist has advocated measures to increase aggregate demand in Italy as a means of absorbing the unemployed, and it is not clear whether Sylos Labini is doing so.

Gardner Ackley

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Business Cycles and Economic Growth. By JAMES S. DUESENBERRY. New York: McGraw-Hill, 1958. Pp. xi, $6.50.

A large portion of recent business-cycle and growth theorizing centers around the construction of models based upon the interaction of the accelerator and multiplier relations. To generate cycles, the models have to be at least second-order and, to minimize the mathematical difficulty, the models have to be linear. Unfortunately second-order linear difference equations can generate but five types of time series, each of which is unacceptable as a representation of the behavior of income over time. To obtain a model which yields an acceptable time series, various authors have suggested that constraints, shocks, or variability of the parameters be added to the basic model.

The core of Duesenberry's significant contribution to dynamic economics is a modification of the accelerator-multiplier interaction which he labels a capital-income adjustment process. This process relates the rate of growth of income and the capital stock to the capital-income ratio. Equality of the rate of growth of income and the capital stock is the equilibrium condition. His model is such that there are either two equilibrium real rates of growth, one stable the other unstable, or no real equilibrium rate of growth. He focuses attention on the stable real solution and investigates the conditions under which it will dominate the behavior of the economy.

Whereas other accelerationist writings on growth and business cycles are primarily concerned with demonstrating that economic assumptions can be strung together so as to generate both cycles and growth, Duesenberry takes these properties for granted. His aim is to use the formal model to explain such observations as the variety among business cycles, the great depression of the 1930's and the generally sustained growth of the era prior to the first world war. The resulting volume is truly a path-breaking handbook which marks the coming of age of the accelerationist doctrine. By carefully using the formal model to explain the past, Duesenberry has taken the first giant step in examining whether the accelerator-multiplier process can be used to predict the future.

To explain not only the similarity but also the diversity among observations, the characteristics of the parameters of the model have to be made explicit. Duesenberry interprets the coefficients of the model as the result of market processes rather than as fixed technological or behavior coefficients. As the market processes of an economy change over time, the range of values that the coefficients can take on also changes. Therefore an invariant set of relations is capable of generating sustained growth during one, and severe depressions during another, epoch.

Of particular interest is the treatment of the accelerator as a coefficient of induced investment rather than as a technological constant. The accelerator reflects the effect of changes in income on the marginal efficiency of capital and the marginal cost of funds. The marginal cost of funds and the savings ratio are both related to profits which in turn depend upon income and the capital stock. The changes in the accelerator and consumption coefficient due to past values of income and capital stabilize the rate of growth of income as long as the capital-income ratio is not too large. If the capital-income ratio

becomes too large, which can only occur due to a fall in income, the economy will no longer be within the domain of stable growth and severe depressions will ensue.

Duesenberry separates two sets of factors which can lead to deviations from stable growth. One set, based upon ceilings, primarily due to labor and financial market considerations, is capable of generating only brief interruptions of the growth process. The second set, based upon shocks primarily from the financial system, is capable of causing a large enough fall in income so that factors tending to stabilize the rate of growth of income are not effective. Although ceilings can cause declines from the equilibrium rate of growth, shocks are required to cause severe depressions.

The emphasis upon market phenomena as determining the behavior of the coefficients in the aggregate model makes it necessary to consider in detail the behavior of particular sectors. The analyses of the behavior of investment in housing, the effects of oligopoly and the source of funds upon investment, and the effects of the money and the labor market upon income are, independently of their place in the over-all theme of the volume, important contributions to dynamic economics.

Readers will find many details (both analytical and concerned with the interpretation of evidence) on which they differ from Duesenberry. However, such details are not significant in evaluating a path-breaking integration of analytical and empirical material. Future serious students of business cycles and growth will of necessity have to use this volume as a "taking-off point" for their own work. In such a manner this volume advances the important business of economic science.

HYMAN P. MINSKY

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The Investment Decision—An Empirical Study. By JOHN R. MEYER and EDWIN KUH. Harvard Economic Studies CII (David A. Wells prize essay for year 1954-55). Cambridge: Harvard University Press, 1957. Pp. xv, 284. $6.00.

There is a good deal of agreement among economists that our understanding of investment behavior is much less satisfactory than that of other aspects of the economic process. Some of the most illustrious economists have put a great stress on the "non-economic" determinants of investment; this position has been summarized by Klein[1] as follows: "The fluctuations in investment are related to highly volatile, capricious, unpredictable exogenous forces such as population movements, wars, inventions, and psychological judgments." Hence a study, such as that under review, placing the investment decision in a framework of an economic model is of obvious interest and importance.

Despite the emphasis of the subtitle on its empirical aspects, the book is far from a pure description or a mechanical application of data-processing techniques. In addition to a brief survey of a number of theories of investment (Ch. 2), analytical considerations are to be found in connection with most

[1] L. R. Klein, *Economic Fluctuations in the U. S., 1921-1941*, Cowles Commission Monogr. No. 11, New York 1950, p. 38.

of the tests of the various hypotheses to which the major part of the book is devoted, both as justifications of the techniques adopted and as explanations of the results obtained. Furthermore, the last chapter is devoted to a theory of the investment decision compatible with the available empirical findings. (A very helpful summary of empirical results from other studies is to be found in an appendix to Chapter 2.)

The study is confined to plant and equipment investment during the years 1946-1950 in roughly 600 U. S. firms (in a dozen manufacturing industries) whose securities were registered with the Securities and Exchange Commission. For each firm annual observations were available on over 20 variables, including equipment purchases, various assets and liabilities, profits, and dividends. In addition, certain price variables, characteristic of the economy as a whole, such as the rate of interest and the relative labor/capital price index, or of an industry as a whole, in particular the stock price index, were used.

The authors' basic objective is to determine the relative importance for the investment decision of the different variables which may be, or have been, suspected of having an appreciable effect. Some of these variables, especially prices, do not vary observably from firm to firm and can only be investigated by following responses to changes over time. Chapter 11 is the only one devoted to such time-series analysis, while the bulk of the book (Ch. 6-10) is devoted to results of cross-section analysis, by industries, both on an annual basis and for the five-year period as a whole. The basic "molecule" of the annual cross-section analysis is a multiple regression relationship with (gross) investment in plant and equipment (denoted by I) as the dependent variable and a group of six explanatory independent variables. Furthermore, there are two alternative cross-section models: the "profit model" and the "sales model." There are, as a rule, six multiple-regression equations per industry *per model*: the five annual ones and that covering the five-year period as a whole.

Of the 6 independent variables, 5 are common to the two models: the depreciation expense D, an (adjusted) equipment-age index A, change in sales S', a "needed capacity" index C, and net quick liquidity stock L. In addition to these 5 variables, the "profit model" also includes the variable "net profits" P, while the sixth variable of the "sales model" is "sales" S. Both models are assumed linear. Some of the independent variables were lagged by one year, and all variables, both dependent and independent, were deflated by previous year's gross fixed assets K. Indicating this deflation by an asterisk, and a year's lag by the subscript −1, the two models can presumably be written as follows (with constants and random components omitted):

Profit Model:

$$I^* = aP^* + bD^*_{-1} + cA^*_{-1} + dS'^* + eC^* + fL^*_{-1};$$

Sales Model:

$$I^* = gS^* + hD^*_{-1} + iA^*_{-1} + jS'^* + kC^* + mL^*_{-1}.$$

[Incidentally, one mild complaint on the reader's behalf is that quite a bit of hunting and conjecturing is necessary to be clear as to just how the variables are defined; the relations are written symbolically, but one has to wade

through verbal explanations to find out their precise functional form; the definition of C on p. 79 seems to be in error, and the statement, also on p. 79, concerning exceptions to nonlinearity causes difficulties: it might have been better to say that the equations are linear in *all* variables, including the capacity C and the "age" variable as adjusted by procedures described on p. 61. (This is the interpretation to be given to A as used in this review.)]

The authors compute the least-squares estimates of the regression coefficients $a, b, \ldots, m$. In addition, they also compute the corresponding standardized ("beta") values and also partial correlation coefficients. These results, including also the multiple correlation coefficients, are presented in Appendix B of the book. In the text, reliance is placed primarily on the patterns of the partial correlation coefficients. As an example of the procedure, it is seen from Table 16, p. 122, that the partial correlation coefficient of gross investment I^* and capacity C^* tends to be higher for most industries in the years 1946 and 1947 than in the years 1948 and 1949. C^* is regarded as an "accelerator variable" and the conclusion drawn is that the "acceleration principle" was most effective under the full-employment conditions of the immediate postwar years and least effective during the subsequent recession.

The focus of the cross-section analysis, which, of course, involves a great deal more than the sample just given, is the test of two chief hypotheses: the acceleration principle, and the internal liquidity principle. As to acceleration, as already indicated, its effectiveness was found to be higher during full-capacity operations than during recession. On the financial side, aversion to external financing was found to prevail. This means that low internal liquidity may well be a powerful factor in restraining investment a firm might be inclined to undertake. Now, in the short run (as represented here by the annual correlations) the firm's liquidity is the residual from profits after the relatively rigid items (dividends, inventories) have been taken care of. Hence high annual correlations between investment and profits. In the long run (as represented by the five-year correlations), on the other hand, the correlations of investment with sales and capacity tend to be higher, thus vindicating the acceleration principle. As the authors see it, there is a desire to maintain a fairly stable ratio of capital to output (the accelerator), but the timing of investment decisions to accomplish this objective depends on profits through internal liquidity conditions.

As for the time-series analysis, the authors' conclusion is that neither the relative labor/capital price nor the rate of interest is of any serious importance, while the stock prices do have a significant effect, possibly as expectation indicators.

The theoretical discussion of the last chapter relates these interpretations of the empirical findings to a model whose emphasis is on an oligopolistically structured industry. The marginal cost curve of a typical firm is assumed (approximately) horizontal up to the point of full capacity, and very steep from there on. When equilibrium is disturbed, say by an upward shift of the industry's demand curve, there will be (due to the shape of the cost curve and to the presence of oligopoly) a tendency to avoid an upward price adjustment. Instead, once the capacity limit has been reached, there will be informal

rationing in the short run, capacity expansion (as permitted by profit-generated internal liquidity) in the long run. Under more competitive conditions, firms may be afraid to defer investments until internal liquidity permits, hence will tend to resort to external financing, and will consequently be more sensitive to conditions of the capital market. The aversion to external financing is attributed in large part to the corporate structure of a firm where ownership and management are separated.

A study of this type naturally raises a host of technical problems, especially in the realm of statistical techniques. The authors make a highly commendable effort to describe the procedures followed in the selection of variables and observations, as well as to justify the choice of one statistical approach over another. Indeed, some of the statistical discussion is of independent interest. Nevertheless, despite the sophistication and erudition in matters statistical displayed throughout, the study lacks, in the reviewer's opinion, a formulation that would present us with a well-defined statistical inference (or, more broadly, statistical decision) problem or set of problems. For this reason, one finds it difficult to say whether, or in what sense, certain facts have been empirically established. But, at the very least, the analysis of the data leads the authors to the formulation of an interesting hypothesis which may be tested on other data. Actually, the accomplishments of the book go well beyond a mere setting up of a hypothesis; and a great many facts, especially in the realm of the interrelationship between financing and industrial structure and concentration, are convincingly brought out.

The authors are willing to look at, take advantage of, and if possible reconcile, a variety of approaches without at the same time surrendering a viewpoint of their own. This nondoctrinaire spirit is most refreshing.

LEONID HURWICZ

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Priskalkulation og prispolitik—En analyse af prisdonnelsen i dansk industri. By BJARKE FOG. Copenhagen: Einar Harcks Forlag, 1958. Pp. 292. Dkr. 36.

The businessman has long been the despair of devotees of price theory. Ignorant of his marginal costs, unaware of the concept of demand elasticity and seemingly indifferent even to the precepts of profit maximization, he threatens by his unprincipled behavior to destroy the very foundations of economic theory. At least, this impression has been fostered by the Hall and Hitch inquiry in England and similar empirical research in the United States. Now, Bjarke Fog has shown that the same sorry state of affairs exists in Denmark where he interviewed businessmen in some 140 industrial firms to learn how they set prices. But Fog, like Fritz Machlup before him, is not duped by what businessmen *say*: They may talk of full-cost pricing but it is at least possible that they actually do maximize their long-run profits nevertheless. Marginal analysis, he seems to say, may yet be saved.

In Denmark as elsewhere price-makers in industry add their mark-ups to average cost (usually not "direct" or variable but total unit cost, including an allocation of overhead). The reasons why businessmen rely on some sort

of full-cost pricing are obvious. There is a strong urge for a price determined by cost alone, a price which can be called and felt to be a "fair price," and a price which can be based on readily available accounting data. Fog's informants talked about all these matters, but interestingly enough when they got down to business, so to speak, they would find ways of escaping the strait jackets into which their pricing methods tended to lace them. Acutely sensitive to demand conditions they would often vary their mark-ups. In a large number of cases, however, the margins were kept fixed, and instead the cost accounting was tampered with until it provided a satisfactory rationalization for a desired price. To cut its price for a particular order, one firm would charge the raw materials on a FIFO basis instead of its usual LIFO. Another firm adjusted prices for one line, which was running into sales resistance, by a paper reorganization of production which reduced the overhead allocated to that line. When a product showed a loss, one firm would reallocate fixed costs, in perfect awareness of the illusory nature of the improvement, so that "we don't have to grumble about some products showing a loss." Another firm, in a similar situation, cheerfully continued to turn out the products which on paper showed a loss, reflecting a justified distrust of its own cost accounting. (One firm, Fog found, went so far as to base its costing on the hypothetical possession of the more efficient machinery employed by a competitor.)

Naturally enough, Fog rejects the simple notion that cost plus a rigid mark-up is even an adequate description, let alone an explanation, of the pricing process. But although most of his informants were quite aware of demand problems, it was as difficult as ever to pin down even subjective conceptions of elasticity. In many cases the individual firm's sales curve was thought of as infinitely elastic and the industry's demand curve as completely inelastic; but generally Fog's businessmen were far more concerned with shifts in the demand curve than with its shape.

Do they maximize profits? To be sure some say they want to maximize "long-run profit" (which as Fog is aware can mean almost anything). Others, not surprisingly, claim to be more interested in stable profits or in reasonable ones (neither too small nor embarrassingly large). Even where profit maximization was a declared objective, considerations of turnover or liquidity often seemed to bear more directly on pricing, and sometimes the pricing policy was the precarious resultant of the conflicting interests of, say, production and sales departments.

Ultimately, then, the mystery of pricing once again proves elusive, even though the author has profited much from the work of his predecessors and tried hard to overcome the linguistic and other barriers which separate the students of business from its practitioners. Perhaps we are unlikely to learn much more about pricing by asking businessmen what they do and why they do it. Price is normally set in some sort of a market, and even price-makers with considerable discretion in their pricing are subject to influences beyond their control and often beyond their articulate awareness. The entrepreneur may, as P. J. Wiles claims, "hold to *any* price that experience shows to be profitable"—he may do so for a while, but the crux is what competition, actual and potential, will eventually do to press him towards profit maximization and efficiency. The "historical element" in prices which Hall and Hitch emphasized

conceals the market's search for a level, and in the long run this rather than the tentative groping by individual entrepreneurs may be what matters even in rather imperfect markets.

It seems unfortunate that Fog so studiously refrains from discussing the wider significance of his problem. The question he sets himself is whether the curious devices to which businessmen resort in setting their prices actually by some tortuous path lead them where marginal analysis would have taken them, or whether we need newer and more adequate price theories, more precisely descriptive of the process of price formation. (His answer, by the way, is a guarded "perhaps.") But is this all that the controversy about marginalism is about? Marginal analysis in price theory is at present sustained largely by faith; yet there is a good reason why it clings so stubbornly to life: one thing we want a price theory for is to evaluate the efficiency of the economic system. Whether businessmen happen to maximize their profits is less important than whether they produce socially desirable quantities in an efficient way, and it is from its linkage to the economist's glimpse of a rational universe that marginal theory derives much of its vital power. On this issue, Fog is silent, although it would seem from his material that perhaps resource allocation is less seriously distorted by actual pricing practices than one might at first suspect. Where competitive pressures do exist, they break through the misleading calculation of his businessmen and force them towards profit maximization and survival. Where competitors are absent, profits are not maximized and prices are held down by a variety of forces: a lingering but real concern with just price, and also the fear of new entrants and of foreign competition.

We might also want a price theory to throw some light on the problem of price stability, and here it is perfectly possible that traditional price theory is less adequate. One suspects that the phenomenon of inflation-*cum*-recession will not be understood without reference to cost-pricing, but one looks in vain for a discussion of inflation in Fog's book, although evidently it was a frequent topic of conversation in his interviews.

If these are some of the weaknesses, the strength of the book lies in the rich and enlightening presentation of actual pricing methods as Fog encountered them. They do not by any means always conform to expectations, and much of his material would no doubt be of interest to an English-speaking audience.

GORAN OHLIN

Stanford University

Untersuchungen über die Theorie des dynamischen makroökonomischen Kernprozesses. By HERBERT GEYER. Frankfurter wirtschafts- und sozialwissenschaftliche Studien 2. Berlin: Duncker & Humblot, 1957. Pp. 170. DM 17,00.

This is what happens when an unusually gifted and diligent German student writes a doctoral dissertation under poor or no supervision: He is encouraged, or at least allowed, to choose a topic on which Dennis Robertson could write a witty 20-page article, Alvin H. Hansen a solid 350-page textbook, and a good ten-man team a four-volume reference work: Dynamic Macroeconomics.

Viewed Historically and Systematically. This is not the literal translation of the title but it is exactly what the author attempts; the doctrinal development in the first part, and the eclectic marshalling of various systematic building materials in the second. Actually, it is quite superfluous to render the sequence of chapters and the particular order of the author's ideas because there is virtually *no* aspect of this oceanic topic—except the statistical!—that he does not try to incorporate. The miracle is not that he fails. The miracle is that, all-told, he does so well. One can take issue with many of his evaluations but must admit they are all serious, intelligent, and tactful.

Geyer tends to overvalue not only Keynes *as pure theorist* but highly aggregative theory in general; the trend, salutarily, is away from that. Also, many of the most enthusiastic dynamic-model builders would now counsel to adjust downward Geyer's appraisal of the cognitive value of schemata which are either completely aprioristic or, on their outer empirical periphery, out of touch with the factually plausible.

No one could accuse Geyer of having read too little. Curiously, though, he has blind spots whenever the literature becomes empirically highly relevant. On the expectations theme, for instance, not only are his sources strangely thin, but the selection seems to betray an almost anti-empiricist bias. The German contributions to the measurement of entrepreneurial expectations by Oskar Anderson, Jr., and his group in Munich may well have been overlooked when the author finished his manuscript; others could not. Likewise, while the manuscript is pre-Meyer- and -Kuh, pre-Koyck, and was written prior to many other investigations into the formation of investment decisions, there are certainly many others that should have been considered. Instead, we find protracted refutations of opinions of people who Geyer, the reader, and the profession know deserve very little attention, and none whatsoever in this context.

So long as a dissertation is conceived of as a kind of comprehensive written examination (and is it not the attitude in many universities?), the published result is no joy to read, no matter how brilliant the candidate. In this specific case, the publication is even rather unfair to the author, who has long since shown that he has progressed and matured well beyond this kind of thing.

EBERHARD M. FELS

University of Pittsburgh

Decreasing Costs as a Problem of Welfare Economics. By C. J. OORT. Amsterdam: Drukkerij Holland, 1958. Pp. xii, 187. $1.50.

This book, which is Dr. Oort's dissertation, treats one of the thorniest problems in welfare economics: indivisibilities and economies of scale. The study stems from a report which he prepared for the Council of Europe on the economic theory of optimum railway freight rates, but this problem is not specifically discussed here. As a result of the study's original orientation, however, Oort's ultimate aim is to reduce rigorous abstract welfare theory to as many valid policy conclusions as possible.

Oort begins by restating and accepting the usual marginal conditions that determine a Pareto optimum. Since this is familiar territory to most economists, this section is probably drawn out more than necessary. Recognizing

that marginal cost pricing causes decreasing-cost industries to incur a deficit at any positive level of output, he raises two issues that occupy the remainder of the book: (1) Since the usual profitability criterion fails, is investment in a decreasing-cost industry worth making? (2) Expressed in real terms, who should sacrifice the goods and services represented by and necessary to pay for the deficit? The latter question inevitably poses the problem of determining the optimum distribution of income; hence the first chapter includes a general discussion of ethics and the optimal distribution of income. The author correctly concludes that all interpersonal utility comparisons are invalid unless one makes some arbitrary normative assumptions—which he commendably avoids. However, after briefly reviewing the literature on the subject of income transfers, he does accept the "principle of compensated adjustment"—which means that the necessary money transfers are actually made—as a weak but valid criterion that can be used for making policy decisions and can also (in theory, at least) be operationally implemented.

The second chapter treats what Oort calls problems or "conditions of nonmarginal adjustment." His theoretical discussion here is perhaps the most disappointing part of the book because: (1) Although in the discussion of practical considerations following the theoretical analysis he clearly states that nonmarginal adjustments are almost always *investment* decisions, it would be helpful to the reader if this were brought out earlier. (2) Similarly, indivisibilities are a major factor making marginal decisions impossible and making nonmarginal decisions necessary, yet they are not explicitly mentioned in the theoretical treatment. For example, Oort's smooth transformation curve (p. 65) hides the nature of indivisibilities in the investment function. (3) He does not mention the irreversibility of investment decisions or distinguish between the two different problems of (a) what to do with a plant that is already built (*investment ex post*) and (b) whether to expand capacity (investment *ex ante*). After an extensive discussion of consumers' and producers' surplus, Oort discards this as practical investment criteria and concludes that investment decisions must be made on the basis of either expected profitability or independent judgment. He indicates that most investment will probably have to be guided by the profitability criterion, which means that decreasing-cost industries must set price equal to marginal cost and then levy a second charge on their customers sufficient to cover the resulting deficit (a two-part pricing system).

The final chapter attempts to derive from welfare principles some practical methods for covering the deficit without violating the over-all marginal conditions. This involves the problems of equity and income distribution previously mentioned. Oort sums up the extensive literature on this subject rather succintly: ". . . in one sense the decreasing cost problem is *insoluble*: the optimum policy of the industry with respect to the method of financing its deficit cannot be defined in terms of a partial rule" (p. 129). It is beyond the scope of his study to propose or discuss general (nonpartial) rules. The final conclusion would seem to do justice to welfare theory when indivisibilities and economies of scale are introduced into the postulates: "Partial analysis in terms of completely general economic relationships appears to have been pushed to the point of zero marginal returns. A final solution

of the problem of decreasing costs can be found only by a new approach to the entire theory of welfare economics" (p. 150).

The text is nonmathematical and fairly easy to read considering the complexity of the subject; it can be recommended to first- or second-year graduate students as a good compendium. It contains a good bibliography but an index is lacking.

JOHN HALDI

Stanford University

Economic Synthesis. By BORIS ISCHBOLDIN. New Delhi: New Book Society of India, 1958. Pp. 543. Rs 30; $6.00.

> This work, presented to the economic fraternity . . . is an attempt to rekindle the sort of analytical social economics which in recent years may seem to have lost some ground to the purely mathematical approach (p. 5).

Ischboldin's book does little to accomplish his objective as quoted from the preface. Among its obvious shortcomings should be considered the following: It is diffuse and cumbersome in style;

> A supermarginal firm which works with a slightly increasing average unit cost is still inasmuch in a relative but not in a total equilibrium as it derives a positive marginal net revenue (vertical rent) from each consecutive unit of its input before the optimum point of output is reached and without a real risk that the aggregate net revenue of this internal nature will be later wiped out since the realized market price must here exceed the average costs (p. 197).

strewn with name dropping;

> The kinetic model of the national economy owes its development chiefly to Spencer, Pareto, Schumpeter, Marshall, Henry Moore and Alexander Bilimovich (p. 165).

filled with "listings" throughout which contribute little to the organization and nothing to clarity. The book is also filled with inaccuracies or at least misunderstandings.

> On the whole, the "indifference method" is original only in as much as it is based on indifference curves in their primary (or fundamental) form when a good is substituted continuously for another good and not for money. Thus, this approach has a very restricted significance in economic theory. The only significance it has is due to the fact that it serves as a supplement to the theory of marginal utility. This once more confirms our standpoint that the contention of some contemporary [sic] economists such as H. J. Davenport, Cassel, Hicks, A. Aupetit and Pareto, that choice makes the concept of subjective value in use obsolete has no theoretical foundation. (p. 144-5).

The reviewer cannot recommend Ischboldin's book for libraries or as a text.

RICHARD E. SHANNON

Montana State University

Microeconomic Theory: A Mathematical Approach. By J. M. HENDERSON and R. E. QUANDT. New York: McGraw-Hill, 1958. Pp. xii, 291. $7.50.

The Preface of this book states: "As the number of economists and students of economics with mathematical training increases, the basic problem shifts from that of teaching mathematics to economists to that of teaching them economics in mathematical terms" (p. vii). The authors therefore presuppose a certain mathematical background on the part of the reader. They do provide an appendix on mathematics, but it is only 26 pages long, and it frankly does little more than catalog the mathematical methods utilized in the main text, including determinants, Cramer's rule, Lagrange multipliers in the solution of constrained maxima and minima, and a dash of simple difference equations.

Judged on the basis of suitability for classroom use, this book is a successful product. The writing style is smooth and clear, and the order of presentation logical and natural. After an introductory chapter, the theory of consumer behavior is presented, followed by chapters on the theory of the firm, market equilibrium, multimarket equilibrium, monopolistic competition, welfare economics, and finally a chapter on optimization over time, where the role of the interest rate in multiperiod planning of consumers and firms is analyzed. The authors also touch upon the newer subjects of linear programming (in the theory of firm), input-output analysis (in multimarket equilibrium), and theory of games (in monopolistic competition, as one of several solutions for duopoly and oligopoly). But the treatment of these subjects is very brief; no more than 4-7 pages being devoted to any of these.

As the book under review is of similar purpose and scope as another recent book by D. W. Bushaw and R. W. Clower, *Introduction to Mathematical Economics* (reviewed in this *Review*, March 1958, pp. 148-49), a comparison between the two should prove useful. First, some similarities may be noted: (1) Both books deal with microeconomics. (2) Both utilize substantially the same mathematical methods, except that BC (Bushaw-Clower) use difference and differential equations much more extensively than HQ (Henderson-Quandt), and therefore demand more mathematical preparation of the reader.

Differences between the two are considerable: (1) Order of presentation: HQ discuss consumers and firms first, then markets, while BC reverse the order. The HQ order is in general easier on the reader, because it introduces him first to the more familiar topics of consumer and firm analyses, and then leads him through the simple market analysis to the complexities of multimarket models. (2) Writing style: BC's literary style is more sophisticated, but its mathematical derivation is too condensed for those who are less adequately trained in mathematics. The presentation in HQ is more down-to-earth, and consequently more suitable for student readers. (3) Aids to understanding: HQ are more generous with the use of graphs to explain the mathematically derived results; their book contains 47 figures as against BC's 30 (in its "Economics" part). But more important is HQ's resort to specific numerical examples to supplement the main discussion which is conducted in terms of general functions. From classroom experience, this reviewer has found that after discussing a problem of, say, maximizing $y = f(u, v, w)$ subject to $g(u, v, w) = 0$, the student will grasp the idea much more quickly if the instructor illustrates it with specific functions, such as: maximize

$y = 2(2 - u)\ (2 - v)\ (2 - w)$, subject to $u + v + w = 4$. The numerical examples in HQ should prove to be a valuable aid to the mathematical novice. The lack of specific examples in BC, however, is compensated by the provision of problems and questions at the end of each section of every chapter. HQ do not provide any exercises at all. (4) Lastly, there is the question of analytical emphasis: Aside from the consumer, firm and market analyses, HQ devote some space to welfare economics and optimization over time, but do not go into dynamics (analysis of the path to equilibrium). BC, on the other hand, though avoiding such topics as theory of games and optimization over time, emphasize the dynamic aspect of microeconomics a great deal, which incidentally explains their extensive use of difference and differential equations. Also, BC stress the distinction between stock and flow with respect to commodities and markets throughout the book, which is a distinctive and refreshing feature.

The last two points, namely the treatment of dynamics and the stock-flow distinction, provide ample ground for placing BC in a somewhat different category from HQ. It can indeed be said that the two books should not be considered as substitutes for, but as complements to each other, in spite of the large number of topics on which they inevitably overlap. As a textbook, HQ has more to recommend it, but BC contains much that is beyond the scope of HQ. The reader who is seriously interested in mathematical microeconomics would do well, after acquiring the necessary mathematical proficiency, to read HQ first, and then proceed to expose himself to the stimulation of BC.

ALPHA C. CHIANG

Denison University

Founders of American Economic Thought and Policy. By VIRGLE GLENN WILHIGHT. New York: Bookman Associates, 1958. Pp. 442. $6.00.

Considerable research has been devoted, since the first world war, to the heretofore neglected field of early American economics. In *Founders of American Economic Thought and Policy,* Professor Wilhight attempts, to use his own words, to "add something to the rather scanty knowledge of early American economic thought and policy." He deals primarily with the leading American economic thinkers in the eighteenth century, with emphasis on the latter half of the period. His general thesis is that the "theories and policies of early American economists were influenced by their European intellectual and social heritage, their New World environment, their personal interests and their class sympathies." He makes a rapid survey of the cultural heritage, beginning with scholasticism and ending with Adam Smith. His short discussion of the new world environment runs in the terms that had more vogue thirty years ago than today, namely, in terms of "conflicts between the rich and the poor, the urbanites and agrarians, the debtors and creditors." He then devotes his full attention to individual studies of William Douglass, Hugh Vance, Pelatiah Webster, Tench Coxe, Alexander Hamilton, Benjamin Franklin, John Taylor and Albert Gallatin.

The author relies primarily on "collected editions" of the writings of these men. His zeal in searching out views of his subjects on value and distribution is commendable. While he concludes that their "contributions to pure eco-

nomic theory were somewhat meager," he does call attention, as others have done, to Hugh Vance's elaborate, systematic treatment of supply and demand as the basic law. The author betrays a lack of sophistication when he solemnly notes that Franklin "has no complete or consistent theory of distribution," as if Franklin was preparing textbooks for college students instead of high-level tracts in the political arena. He carries this naïveté to an extreme, when he characterizes the entire group in the concluding chapter as "near-economists." This is tantamount to saying that had Ricardo not written his *Principles of Political Economy*, he would have been properly labeled a "near-economist"!

One could agree with the author's judgment that "there has never been a more famous or a more effective democrat than Jefferson," but it would be difficult to accept his view that Hamilton's economic policy contained "more than a trace of fascism," especially when the substantially similar views of Tench Coxe are presented as containing "more than traces of economic democracy." Even more confusing is the discussion of John Taylor's defense of slavery, particularly as Wilhight hails Taylor as the economic philosopher of Jeffersonian democracy. "As for other southern liberals, the slavery issue was a trying one for John Taylor. His humanitarian and progressive character impelled him to oppose all kinds of human bondage, but his loyalty to his class and his section led him to apologize for slavery and to resent the attacks on an established southern institution."

The author rightly stresses the overwhelming importance of monetary issues to the early American economists, but he fails to note the serious questioning in the last decade of his view that in the colonial period the supporters of "hard" money were the spokesmen for an "urban economic elite" and the supports of "fiat" money were the spokesmen for the underprivileged, democratic-minded mass. The discussion would have been enriched had the author explained why his interpretation of the colonial monetary experts did not hold for the subsequent period, when his "urban and agrarian democrats," notably Franklin, Gallatin and Taylor, were "hard money" men.

The book should prove useful as supplementary reading to existing works, especially in the area of value and distribution.

JOSEPH DORFMAN

Columbia University

Economic History; Economic Development; National Economies

The Challenge of Development. A symposium held in Jerusalem, June 26-27, 1957. Jerusalem: Eliezer Kaplan School of Economics and Social Science, The Hebrew Univeristy, 1958. Pp. 233.

This book contains a dozen contributions to the symposium of the Eliezer Kaplan School of Economics and Social Sciences of the Hebrew University in June 1957. Most of the authors are members of the Hebrew University, while the others are scholars from Britain, France and the United States.

In the paper "The Pace of Development" Richard Kahn, King's College, Cambridge, contradicts the view that a high rate of economic development for economically backward countries inevitably entails economic sacrifices for the present generation, pointing out that the validity of the view hinges on

several factors, such as the employment level, taxation and distribution of resources. Merely by taking advantage of available labor and of other productive resources development can be undertaken. "It is not difficult to think of labor creating capital without using but the simplest tools," he quotes Arthur Lewis. The wealthy are often favored in underdeveloped countries, so that a more equitable system of taxation could tap hidden resources for development. Nor is indirect taxation antisocial under certain conditions, the author shows. Its effect on the community depends partly on its impact on profit margins which, in turn, hinge on the elasticity of supply. If this is very small, indirect taxes fall mainly on the producers whose excessive profits drop in such a way that the question of lost output scarcely arises, provided profit margins are not curtailed to the level where production is seriously affected.

Alfred Bonné, of the Eliezer Kaplan School, asks how scarcities of capital, management, know-how and entrepreneurial drive in underdeveloped countries may be counteracted. He suggests the establishment of state-sponsored public corporations acting as national cooperative producing agencies. He further suggests that the life-span of these agencies may be confined to the period of the "break-out of the circle," keeping their production functions going only until the new process acquires its own momentum. He quotes W. W. Rostow's stimulating idea of "take-off into self-sustained growth," a kind of economic count-down—to use a popular term—until progress becomes automatic.

America's experience is considered. To what extent is the unique economic experience of the United States meaningful to the smaller countries and up to what point are the validity and applicability of concrete experience in the field of development dependent on the size and conditions of the underdeveloped nations? A tentative answer is given by Simon Kuznets, Johns Hopkins University, in his paper on the "Economic Growth of Small Nations." An indispensable prerequisite of modern economic growth, he shows, is a social framework capable of continuous and relatively painless adjustments. Because of greater population coherence, a stronger community sense, and a greater elasticity of social institutions, the smaller countries have an advantage; so that what they lack in respect to economic factors they have—and that in abundance—in respect to social institutions.

Keeping money "neutral" is particularly important for the underdeveloped countries, in the view of Don Patinkin, of the Hebrew University. It may be necessary, therefore, to introduce an escalator clause under deflationary as well as inflationary conditions, so that by linking the size of debt payments to the price index secular price movements will have less effect on debtors' real asset positions.

The Governor of the Bank of Israel, David Horowitz, sets forth the reasons why the underdeveloped countries exhibit a tendency to substitute state enterprise for *laissez faire* and to replace the natural formation of capital by "inflationary saving." The main reason is that the developed nations absorb so much of the available capital that little remains for the others, and indigenous saving is inadequate.

Approaching the problem from the sociologist's point of view, Talcott Par-

sons, Harvard University, points out that private enterprise has only a limited chance of acceptance in the underdeveloped countries because it is associated with colonialism and because it appeals neither to the upper social group nor to the peasants. The former shun the opportunities requiring risk capital while the latter shun the upper groups. Nationalism turns to traditional values and is therefore conservative.

Israel's special problems are discussed in several informative papers, especially in one by A. G. Black, representative of the Food and Agricultural Organization in Israel. He shows that Israel is one of the few nations outside of North America where farm production has increased. While the country's agrotechnical problems are well in hand, progress in solving the specifically economic problems of agricultural production are less obvious. Labor efficiency is still low; unit costs are high. Irrigation water is three to four times more costly than in America. Yet Israel must shoulder this extra burden in order to save foreign currency and stock its food bins—a fort under siege.

Within their frames of reference, the authors have produced stimulating papers which both scholars and government officials will read with profit. The great question, however, remains: can the underdeveloped countries' problems be solved without a basic change in the climate of their public opinion by means of a massive campaign of education to overcome lethargy, dependence on esoteric cultural forces and the ancestors' wisdom? Will the "crash programs" of the autocracies prevail against the gravitational pull of tradition in the easy-going democracies?

EMIL LENGYEL

New York University

African Economic Development. By WILLIAM A. HANCE. New York: Harper and Brothers, for Council on Foreign Relations, 1958. Pp. xii, 307. $4.00.

This collection of essays by Professor Hance treats a variety of topics, ranging geographically from Liberia to Madagascar and in subject matter from agriculture to race relations. Potentialities for economic development in tropical Africa and some of the obstacles are reviewed in an introductory chapter (a revised version of an article published in *Am. Econ. Rev.*, Proc., May 1956, pp. 441-51). Another chapter, perhaps the most valuable in the book, reflects the author's special competence and extensive research in the field of transport problems. The remaining chapters focus on problems of economic development in a half-dozen different areas.

The Sudan is represented by a chapter on the Gezira Scheme, outstanding as a successful "partnership scheme" for irrigated production of cotton. Several other agricultural development projects are also mentioned but too briefly to throw light on an intriguing question: Why have other schemes inspired by the Gezira experiment, for example the Niger Agricultural Project in Nigeria, been such dismal failures? Economic development problems in Ghana are discussed more or less incidentally in describing the proposed Volta River Project and the impact it is likely to have. Construction of the deepwater port of Tema is already under way and will be of considerable value even if funds are not found to develop the Volta's power potential and aluminum production.

Hance suggests, however, that the existence of huge bauxite reserves, a dam site 200 miles away where cheap power can be produced for a smelter with capacity larger than the aluminum output of France or Germany, and a nearby port add up to a resource that will, sooner or later, make a significant contribution to Ghana's development. A summary of the Report of the East Africa Royal Commission and of the comments on the report by the territorial governors provides a useful brief account of the major economic problems and policy issues that confront the governments of Kenya, Uganda, and Tanganyika.

More comprehensive descriptions of the recent history and prospect of economic development are offered for Liberia and the Federation of Rhodesia and Nyasaland, areas that offer sharp contrasts. In the Federation a sizable European population has provided skills and capital that have contributed to a phenomenal rate of economic growth, but the difficulties of implementing the official policy of partnership in a multiracial society cloud the future outlook. Hance prefaces his chapter on Liberia by quoting a *New York Times* report that "The Liberian representative here declared this week [March 1957] that his country lagged materially behind the new nation of Ghana because it had always been independent and had never reaped the advantages of colonialism. . . ." His description of conditions in Liberia a decade or two ago underscores the obvious but sometimes neglected fact that the designation "underdeveloped" embraces a broad spectrum; and Liberia is one of the areas that has barely started down the road of economic progress. His description of recent developments, notably since construction of a deepwater port at Monrovia (1945-1948), suggests a more promising outlook. Foreign investment, European as well as American, has increased; a program of technical and economic assistance is improving the road net, expanding education, and promoting development of agricultural and forest resources; and the leadership of President Tubman, including efforts to bridge the gulf that separates the privileged Americo-Liberian minority from the indigenous population, has helped to create a more favorable economic environment. The chapter devoted to Madagascar is essentially an essay in human geography, discussing the ethnic origins of the island's population, noting similarities and contrasts in the physical environment of Madagascar with other parts of tropical Africa, and providing only a thumbnail sketch of the problems of agricultural, mining, and industrial development.

Choice of territories and topics for inclusion in a book of this character is necessarily somewhat arbitrary; most of the chapters were prepared originally as research papers for a discussion group on economic development in Africa organized by the Council on Foreign Relations. Since all of the essays deal with interesting and significant subjects, the selection is not easily criticized. The composite result is something of a compromise; on selected topics it is more informative than a general survey such as L. Dudley Stamp's *Africa: A Study in Tropical Development,* but even the "country chapters" are not as complete or quantitative as might be desired.

Recurrent themes which contribute to the unity achieved in this volume include emphasis on the need for: more fundamental research into such prob-

lems as the proper management of tropical soils; creation of an efficient transportation network; and progressive elimination of the color bar and other social barriers to economic progress in areas such as Kenya and the Rhodesias. As a sensible and lucid introduction to selected areas and problems in tropical Africa, the book can be strongly recommended.

BRUCE F. JOHNSTON

Food Research Institute
Stanford University

The Conflict of Expansion and Stability: Documents Relating to Australian Economic Policy 1945-52. Edited by D. B. COPLAND and R. H. BARBACK. Melbourne: F. W. Cheshire; New York: Institute of Pacific Relations, 1957. Pp. xvii, 795. $9.00.

The publication of volumes of documents on economic policy is an Australian tradition of many years' standing, for which students of Australian affairs have good reason to be grateful. The latest and probably the largest of the series touches practically every aspect of Australian postwar economic history. The period surveyed begins, reasonably enough, before the end of the second world war, for the thinking which had already then begun had some important effects upon the subsequent course of peacetime events. By 1952, the end of the period covered by this volume, it was fairly clear how far the expectations of postwar troubles had been justified or falsified, and Australia was grappling with all the characteristic problems which seem to beset every economy with an ambition to develop rapidly, and especially every economy such as Australia, where, as the Governor of the Commonwealth Bank of Australia recently put it, the prevailing "political" attitude of all parties toward interest rates is that they should be low. Inflation, exchange rate policy, international monetary policy, trade policy, agriculture, wages and hours, banking also receive careful attention. A broad interpretation is given to "documents," which are made to include not only government policy statements, excerpts from Acts of Parliament, Arbitration Court judgments, extracts from the annual reports of the Tariff Board, and other similar public records, but also extracts from parliamentary speeches, newspaper editorials, and contributions to economic journals. Apart from a brief introduction the editors have firmly resisted any temptation to editorialize. The reader must rely upon his own resources to give the authorities quoted their proper place in the historical framework, discounting their statements to whatever extent he may think proper in the light of his knowledge of their political or economic prejudices.

For a book of this kind it is scarcely possible to attempt a review in the strict sense of the word. The reviewer would have to embark upon the editorializing which the editors themselves have, with good reason, avoided, and an adequate commentary on all the important topics to which reference is made would run to impossible lengths. It is, however, of interest to note some of the issues on which even the wisest commentators went astray as they tried to discern in an uncertain future some firm basis for current policy decisions. The contrast between the obsession with full employment—which, as in most countries, found no precise definition in Australia—with the associated fears

that the end of the war would be followed by a deep depression, and the slow realization that the fundamental problems with which the postwar world had to grapple were of an entirely different kind was nowhere sharper than in Australia. And further sober reflections about the unavoidable risks of current prediction may be provoked when it is observed that, according to the official report on Australia's participation in the Bretton Woods Conference of 1944, Australia, now the second largest customer of the International Bank for Reconstruction and Development, was unlikely to be either a borrower or a large lender, and the usefulness of Bank membership was presented mainly in terms of its indirect effects upon the market for Australian exports. Similarly in 1947 it was thought that exports of Australian wool to Germany, Japan, and Italy were unlikely to reach anything like prewar levels for many years to come, and the hypothesis that the population of Western Europe would start declining in a few years was suggested as a suitable part of the framework for analyzing export market prospects in general.

The editors express in the Introduction an intention to return later to the task of making a similar selection of documents for a subsequent period. As one of them is now Principal of the Australian Administrative Staff College and the other professor of economics in the University College of Ibadan, Nigeria, it seems likely that this task will have to be passed on to others. It is to be hoped that successors will be found to turn out with equal skill a companion volume which will be as indispensable an instrument for any thorough study of Australian economic policy as the work that has been produced by the editors of *The Conflict of Expansion and Stability.*

ALLAN G. B. FISHER

Washington, D.C.

Japan's Economic Recovery. By G. C. ALLEN. London: Oxford University Press, for the Royal Institute of International Affairs, 1958. Pp. xi, 215. $4.75.

The foremost Western student of Japanese industry, G. C. Allen of the University of London, presents in this slim volume his appraisal of Japan's remarkable recovery since the war. Persons acquainted with his earlier writings will expect a high quality of judgment and analytical skill. In this they will not be disappointed.

Professor Allen's study commands attention in three respects. His account of postwar Japanese industry affords useful insights to students of industrial organization and international trade. His critique of the occupation reforms carries lessons in political economy and social reform of significance beyond Japan. And his hopes and fears for Japan's economic future touch upon one of the uncertainties of Asia which will remain of worldwide concern for some time to come. Happily the book complements rather than duplicates another excellent volume lately to appear—Jerome B. Cohen's *Japan's Postwar Economy* (Bloomington, Ind., 1958). Whereas Cohen explores at length Japan's trade and payment relations with the United States, Southeast Asia and the Communist bloc, Allen devotes himself more largely to structural changes in Japanese industry and banking since the 'thirties when he published his au-

thoritative studies of this subject in *The Industrialization of Japan and Manchukuo, 1930-1940*, edited by E. B. Schumpeter.

A British official remarked to this reviewer in 1946: "You Americans are neglecting Japan's economic recovery in favor of political reform, while in China you stress economic recovery to the neglect of the political problem." In retrospect few would disagree. Allen's thesis is that occupation reforms dictated by "vindictiveness and idealism" (not a very apt characterization) had to give way to the stern pressures of economic necessity. To temper them to realities, as was done after 1948, was not a betrayal of liberalism but a condition of their survival. These realities, on the economic side, were above all a certain factor endowment—plenty of skilled labor, and a continuing shortage of capital and entrepreneurial ability.

Despite the permanent impress of the war and the occupation, what struck Allen on returning to Japan in 1954 was the continuity of Japanese institutions. The land reform, "the most remarkable and enduring achievement of the Occupation," yet failed to eliminate small holdings, low productivity and underemployment on the family farm. The new charter of trade unionism soon had to be modified to curb disorders in essential public services. The deconcentration program hampered recovery by weakening *Zaibatsu* centers of business initiative and its virtual abandonment has been followed by a regrouping of enterprises around the great banks, albeit more loosely than in the prewar combines. (Was this abandonment caused by "economic necessity" or by the structure of political power and tradition?)

Meanwhile masses of small firms are still found in intricate patterns of coexistence with large-scale, capitalistic enterprise. Again as in the 'thirties, Allen concludes that Japan's factor endowment enables the small firm not merely to survive in traditional trades but to develop vigorously in modern industries manufacturing electric lamps, bicycle parts, automotive equipment, fishing tackle, sewing machines, etc. His account of Japan's growing comparative advantage in large- and small-scale industries benefiting from cheap but high-caliber technical and organizing skills recalls F. W. Taussig's characterization a generation ago of Germany's advantage in world industrial markets based on a "learned proletariat" and a "marked faculty for elaborate organization."

As regards the future, Allen is less apprehensive for Japan than many observers of the scene, including most Japanese. He recounts the familiar outlines of her problem: a still swelling population, an urgent need for cheap raw materials and food from abroad, a serious fuel shortage in particular, and a technological lag behind the West that still handicaps exports of machinery and chemicals in which the country must seek its future. Reassurance is found in the resilience and vitality of Japan's resurgence since the war. If there are doubts, they concern the kind of world disorder in which Japan must now live, and whether she can retain the national purpose and social unity which have made possible her whole industrial achievement thus far.

This latter question the author touches upon only briefly in conclusion. Yet, as always in economic affairs, it is the social framework which is determining, rather than the more neutral factors of resources and technology. Here

we still lack any real assessment of the new mobility and equality of life in Japan, or its expression in the working forces of Japanese politics today, or the implications of these new currents for the enterprise system which has brought the country thus far in its industrialization.

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The Industrial Output of the Ukraine, 1913-1956: A Statistical Analysis. By VSEVOLOD HOLUBNYCHY. Munich: Institute for the Study of the USSR, 1956. Pp. ix, 63.

Although we have a number of fine works on the USSR as a whole, regional studies are scarce, and usually unavailable in English. Holubnychy's pioneer collection of statistical data focuses on the second largest Soviet Republic, whose relative importance and problems can hardly escape the attention of students of the USSR.

The study is undoubtedly the best available statistical abstract on the performance of Ukraine's economy between 1913 and 1955. It gives us not only annual output and consumption data in the key industries but also attempts to make them more meaningful by giving per capita figures, or comparing the Ukraine with other nations. Some 100 tables are given in physical terms rather than in the form of indices such as are typically employed in Soviet sources. Careful bibliographical annotations will prove of great value to those interested in further studies or in special topics.

The author has pointed out the difficulties in filling in the lacunae where information was withheld or distorted. In this connection, the reader should be aware of some methodological weaknesses of the study. For example, where the author has used several sources, he claims that a high correlation coefficient for several sets of figures testifies to their reliability. Unfortunately, the reader cannot tell (and I doubt) whether these different sets were compiled independently. Hence a "high" correlation coefficient (which incidentally may not be significant) may be irrelevant, telling little about the competence and reliability of the sources. Another defect is his practice of arriving at a missing figure by linear interpolation of the two adjacent years. If, for instance, the Soviets withheld data for 1931, as they did in so many instances, to estimate data for that year one should pry deeper than merely average the years 1930 and 1932. Likewise, several figures given on the assumption that the state plan had been fulfilled can hardly be regarded as credible estimates. Thus, the seemingly complete tables contain a number of guesses which more detailed study might not confirm.

On the whole the book is one of the finer publications of the Institute for the Study of the USSR. It will prove a most valuable source and a point of departure for further studies of the economic status of a key area of the Soviet Union.

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Economic Systems; Planing and Reform; Cooperation

Theoretical Economic Systems—A Comparative Analysis. By WALTER S. BUCKINGHAM, JR. New York: Ronald Press, 1958. Pp. vii, 518. $7.00.

A book on comparative economic systems can either compare the systems as they exist in reality or the systems as they are visualized in the writings of their proponents. Professor Buckingham has chosen the second alternative but with an exacting modification: to describe each system not only as it appears in the theory of its protagonists but also in the theories of its critics. He comes closest to success in the case of capitalism, because in addition to the classical theory there is indeed a Marxist theory of capitalism; but the author's (half-hearted) efforts to glue together other theories of capitalism from the writings of the Institutionalists and the Historical School remain unconvincing. When he then discusses socialism, the book loses its focus entirely: the "Theory of Liberal Socialism" and the "Theory of Central Planning" or "Authoritarian Socialism" are not different theories about the same system but concepts of different systems.

The author is most at home when he moves in the area of modern capitalistic business practices, especially with regard to imperfect competition and its effect on the functioning of the system; these sections may well be found useful in class instruction. The same is true of the last chapter: "Emergence of a Universal Economic Order." One does not have to agree with the author's expectations, or even with all of his factual statements, to welcome his emphasis on the similarities between present-day "capitalism" and the Soviet economies as an offset to the usual overemphasis on the differences.

CARL LANDAUER

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Kratkii ekonomicheskii slovar'. (The Concise Economic Dictionary.) Edited by G. A. KOZLOV and S. P. PERVUSHIN. Moscow: 1958. Pp. 391. 11 rbl.

The transformation of Russian communism from a revolutionary sect to an established and opulent church is vividly symbolized by the outward appearance of its works of prime ideological import. In the early days of the regime books and pamphlets of this order dazzled with blood-red covers or blood-red lettering. After "socialism was attained" in the 'thirties the covers became a conservative grey or beige, with unpretentious blue or black letters: circumstance—yes, pomp—not quite yet. Today the lettering is almost invariably gold and the cover is likely to be royal blue, or bright mauve as in the case of this book. The most obtuse will not fail to recognize the Logos of Orthodoxy.

The Dictionary—surprisingly it did not appear years earlier—is a *Pravda*-Reader's Guide to economic terminology. Here he can conveniently check the current official meaning of stock words and phrases, from "absolute surplus value," through "relative impoverishment of the proletariat," and to (in the Russian alphabet) "electrification." There are some 1,000 entries, occupying nearly 400 double-columned pages. They embrace the standard Marxist terms, some of the language of Soviet planning and economic administration, and some items drawn from noncommunist economic reality (e.g., the sterling

bloc). The list is up-to-date: It includes such entries as the regional "Councils of the Economy" (*sovnarkhozy*) created in the USSR in mid-1957, and "revisionism in [communist] political economy." No names or countries are mentioned under the latter caption, but it is not hard to guess that "the unstable elements in communist parties" which are guilty of the deviation are primarily to be found in Yugoslavia, Poland, and other Eastern European countries.

There are also biographical entries. Four of them are eulogistic, and it may be hagiologically significant that Marx and Lenin rate 8½ columns each, Engels 3 columns, and Stalin—only 2, of which a portion deals with his theoretical errors and with the "cult of [his] personality," which led to "violation of the principles of socialist legality" . . . "and rendered theoretical work extremely difficult." A few of the other biographical sketches, such as those of Adam Smith and Ricardo, are rather favorable in so far as some of the Marxian conceptions originated with them. The only writers of the Soviet era to "make" the dictionary are Lenin and Stalin. Not a word, let alone a good word, about Trotzky, Bukharin, Preobrazhenski, and the other great economic minds of the 'twenties. (Not a word either about Khrushchev, Mao, or Tito.)

But those who can be subjected to routine attack and on whom the "line" is fixed, i.e., Western and prerevolutionary Russian economists, are represented in considerable number. There is even an article on something called the "Harvard Economic School"—allegedly a school of capitalist apologetics through business cycle forecasting—though the only names mentioned are Warren Persons and (sic!) Wesley Mitchell. (Alvin Hansen and Seymour Harris are taken care of under their own names elsewhere; Schumpeter is ignored.) It is also in these demonological exercises that some of the Dictionary's better gems are strewn. Thus "vulgar political economy" (which is the economics represented by this *Review*) has the double task of "embellishing and justifying capitalism" in general, and, in particular, of "camouflaging the hegemony of capitalist monopolies, . . . and of discovering and justifying new methods of ensuring monopoly profits." Keynes, we learn, "preached an offensive against the living standards of the working class, and advocated militarization and war." And J. B. Clark's theory of marginal productivity had, as its main purpose, "the theoretical justification of the reduction of wages to the level of the so-called 'marginal product of labor.' "

And so it goes. There is little to commend this book to the serious student of Soviet economics except convenience as a reference-source for the current official definitions. But as such it adds little to the *Large Soviet Encyclopedia* or the *Textbook of Political Economy*. And the reader will get from it no inkling of the recent debates among Soviet economists (not to say those of the 'twenties), or of the mounting search for economic rationality within the framework of Soviet institutions.

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Public Finance; Fiscal Policy

Public Principles of Public Debt. By JAMES M. BUCHANAN. Homewood, Ill.: Richard D. Irwin, 1958. Pp. xi, 223. $5.00.

According to Professor Buchanan, economists who lecture their students about public debts should revise their notes, lest they be guilty of instilling false doctrines in the young. Vulgar opinion—the term is Buchanan's—has been right all along. When a government finances its expenditures by increasing its debt, it does postpone the cost to future generations. Analogies of public to private debt do hold, and the economic differences between internal and external debt are seriously overemphasized. If the reader finds these propositions challenging, he may wish to add this book to his reading list.

To establish these truths Buchanan proceeds by the commendable method of attacking falsehoods, producing a work of strong polemical tone. The false doctrine is labeled the "new orthodoxy" which includes the pronouncements of such diverse thinkers as Mill, Pigou, Lerner, and Hansen. Henry Simons' views come off better, although I do not understand just why. Both Lerner and Simons, for example, have maintained that the sale of government debt is a deflationary device, a technique for reducing private expenditures. Mill held that the sale of government debt acts like a tax, a view consistent with that of Simons and Lerner, but certainly not of Hansen. On the issue of the postponability of government costs, Buchanan cites a strong statement by Pigou condemning this view as fallacious, but in another work, cited on the same page as the quoted passage, Pigou holds that costs of government are postponable in part—a position that should have given Buchanan some comfort. There are wide diversities among the theories about public debts among those classed as belonging to the "new orthodoxy." I am unaware of any orthodoxy, new or old, in the analysis of government debts in the sense of a settled body of thought that is widely accepted in economic circles as the final truth.

The central positive view Buchanan proposes is the postponability of the costs of a government program when financed by the sale of debt. Fortunately he provides a succinct demonstration of this view (p. 40):[1]

> All of this may be made quite clear by asking the simple question: Who suffers if the public borrowing is unwise and the public expenditure wasteful? Surely if we can isolate the group who will be worse off in this case we shall have located the bearers of the primary real burden of the debt. But clearly the bondholder as such is not concerned as to the use of his funds once he has received the bond in exchange. He is guaranteed his income in the future, assuming of course that the government will not

[1] The assumptions made at the beginning of this analysis are: there is full employment, the debt is to be created for real purposes (meaning ?), the public expenditure and debt sale are too small to affect prices and interest rates, the funds used to purchase government securities are drawn from private capital formation, perfect competitive conditions exist throughout the economy, and the public expenditure can be for any purpose.

> default on its obligations or impose differentially high taxes upon him through currency inflation. The taxpayer in period t_0 does not sacrifice anything. . . . The burden must rest, therefore, on the taxpayer in future time periods and on no one else.

The demonstration is proof by indirection. There are three groups treated as eligible for the role of "bearers of the primary real burden of the debt" consisting of (a) present buyers of new debt, (b) present taxpayers, and (c) future taxpayers. Group (a) is eliminated because they are not hurt at all. Group (b) is eliminated by assumption; there is no increase in taxation. Hence Group (c), future taxpayers, is the only group left. Since the pea is not to be found under shell A nor under shell B, it must be under shell C.

The pea may not be under shell C, it may have been palmed; indeed, there may be no pea at all. The pea in Buchanan's analysis is the "primary real burden of the public debt." Close reading failed to disclose the meaning of this formidable phrase. The terms "real" and "burden" are notoriously slippery. A retreat to simpler and more fundamental concepts is indicated.

Consider a wasteful government project, say the acquisition of military planes that will not fly. The cost of construction is the value of resources used to produce them. Such costs are contemporaneous; present resources are being used to produce planes instead of other present things. In this sense of cost, there can be no postponement regardless of any accompanying financial devices. Any output obtained from the use of scarce resources when resources have multiple uses implies the forfeiting of alternative products. If the term "real burden" is to be interpreted as the value of resources used to produce for government account, the real burden must be contemporaneous whether new taxes are imposed, new debt is sold, anything else is sold, or reserve requirements of banks are increased. Adam Smith solved this problem implicitly in his parable of the hunters, any of whom could kill two deer or one beaver in a day.

The accompanying question of what group in a society is to be identified as paying for the use of resources to produce for government account is a different one and may not even have an answer. What meaning is there is asking what particular people in the United States pay for Mr. Dulles' trips, the Pentagon's mistakes, military assistance to Chiang Kai-shek, or the Eisenhower Administration's extravagant highway program? Buchanan thinks such questions are both meaningful and potentially answerable because of his procedure of linking a particular government program with a particular financing device. In the passage quoted above, we are asked to think of some wasteful government project as specifically financed by the Treasury sale of government debt. Who can say whether the dollars spent on planes that do not fly come from the tax on cigarettes, the income tax on people with taxable incomes in excess of $20,000, from the interest on the British loan, or from the sale of Treasury Bills? What is lost is the output, government or private, that could have been produced instead of the planes.

Other topics in the area of public debts are discussed such as public borrowing during depressions, war, and inflations, and when a government should borrow or retire debt. The postponability possibility remains the dominant

theme throughout. It turns out that even though we can shift the present costs of government to our children, we ought to be careful about doing so and even, on occasion, retire debt. No firm principle emerges from the discussion. Yet I cannot see how Buchanan could reasonably object to a policy position calling for the large-scale substitution of debt sales for tax receipts. Why not let the future generation pay? The question should, I think, be posed in a different way. Should people be taxed more or less heavily by taxes or taxed less or more heavily by debt operations? There is no escape.

Buchanan has provided a stimulating work calling for a re-examination of fundamental ideas in economics. Its success will depend upon the amount of controversy it provokes; it is so designed. At this date, an assessment of its net contribution to knowledge would be premature.

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Zunehmende Staatstätigkeit und Wirtschaftliche Entwicklung: Versuche über die Wirkungen staatswirtschaftlicher Prozesse in der spätkapitalischen Periode. By KONRAD LITTMANN. Cologne: Westdeutscher Verlag, 1957. Pp. 360.

Taking his title from Adolph Wagner's famous law of increasing government functions, Littmann has written a penetrating analysis of the impact of growing state economic activity upon economic growth in a late-capitalist nation. In the definition of economic activity, regulatory devices are excluded, the analysis concentrating upon state expenditures and revenues. The author begins with an examination of mercantilist and liberal attitudes toward the economic role of the state, showing that the underlying premises of both were value judgments and that they rejected the liberal credo that state activity must, by its nature, be unproductive. Liberal economics assumed the problem out of existence, and the author credits von Stein, Schäffle, and Wagner with bringing into the mainstream of dogma the interrelationship of the public and private sectors. He notes, however, that they did not explore the matter thoroughly. Keynesian theory and functional finance, he points out, are short-run and cannot be directly applied here.

According to Littmann, growing state activity, defined as a secular increase in public expenditures greater than the increase in private expenditures for consumption and investment, need not necessarily impede growth. However, unless state policy is specifically designed to foster growth, increasing state activity does threaten economic development. The greater the public sector in relation to the private, the greater the state's responsibility for growth, and the less chance of compensating in the public sector for the decline of the private.

The major weakness in Littmann's work lies in his omission of the possibilities of economic planning in a state with growing functions. Evidently he assumes, and the assumption is historically justifiable, that functions accrue to the state in the manner of Topsy's growth, without concurring change in the political relation of the state to the business community. Conceivably, continued

relative growth of the public sector might, at some point, bring about economic planning as a matter of necessity, particularly with the growth of monopoly. It is, of course, entirely possible that an exploration of the growth possibilities of a planned quasicapitalist economy would lead to the same conclusions, but the area was worth exploring. By excluding control from consideration, Littmann might very well have excluded one possible solution to his dilemma. Parenthetically, this reviewer might add that the assumption of so many economists that growth in and of itself is a "good thing" is a value judgment that future and wiser generations might not accept as easily as we do.

Aside from these quibbles, Littmann deserves high praise for dealing so lucidly with economic thought, static and dynamic theory, and institutional considerations in an age when economists are so overspecialized. His ideas are worthy of serious examination by economists interested in the long-run implications of the fiscal methods of the modern state.

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International Economics

Dollar Shortage and the Structure of U.S. Foreign Trade. By ERIK HOFFMEYER. Copenhagen: Ejnar Munskgaard; Amsterdam: North Holland, 1958. Pp. 232.

This book, but for a few months' delay, would have been a part of what C. P. Kindleberger in the June 1958 issue of this journal described as the bumper crop of 1957 in the history of the literature on dollar shortage. The product of a Danish scholar, it is an interesting addition to the voluminous published discussion that has taken place since the early 1940's on this controversial problem. Compared with the recent treatise of Sir Donald Macdougall, it must be classed as a modest contribution to the debate; but who, indeed, could hope to match Macdougall's great performance? In any case, the two studies, as the author recognizes in his introduction, are complementary rather than competitive.

The study divides itself into essentially two parts, each of roughly equal length, and not as closely integrated as the author undoubtedly intended them to be. The first half is devoted to a detailed and critical examination of the various views that have been presented regarding the concept of dollar shortage, the length of time that it may be said to have existed, and the causes of its existence and especially of its alleged tendency to persist. Given the wide and often bewildering diversity of theories of dollar shortage, as well as the amount of confusion that has often characterized them, the author deserves much credit for his skillful attempt at a systematic and coherent exposition and classification of the various theories, based upon a reading of practically everything of importance that has ever been written on the subject. His classification consists of "elasticity pessimism models," "activity models," "growth models," and "organic models," each of which is further subdivided. He finds that all these models can in turn be grouped into two broad classes: those

which contend that it is not possible to restore equilibrium, once disturbed, by acceptable means; and those which contend that there is a persistent tendency for equilibrium to be disturbed in such a way as to create a surplus in the United States balance of payments. In general, he is critical of all of the existing theories, either because of what he considers to be logical shortcomings or because of failure to be supported by the facts in those cases where statistical testing is possible.

The second half of the book, which constitutes its more distinctive contribution, is given over to a detailed statistical examination of the evolution of U.S. foreign trade during the past 50-75 years with a view to testing an alternative hypothesis which the author cautiously advances as to the cause of what he considers to have been a persisting tendency towards a surplus in the United States balance of payments. After outlining seven kinds of possible "reactions" by individual countries to balance-of-payments disturbances—some of these reactions ("active") tending to impede the transfer of real resources necessary for adjustment, e.g., cartel agreements, tariffs, and trade controls, and some ("passive") tending to facilitate adjustment, e.g., normal price and income effects—and after giving concrete examples of the working of these various types of reactions drawn from the historical experience of several key U.S. foreign-trade commodities, the author advances a theory of dollar shortage which may be outlined in his own words (p. 159):

> Since the end of the 19th century the comparative advantage of the U.S. has increasingly been in the production of new and research intensive goods, whereas the exports of the rest of the world to the U.S. have been mainly traditional commodities with no great research intensity and which the U.S. has to a large extent been producing itself.
>
> The continuing need for adjustment has been easier to solve for the U.S. than for the rest of the world as it is assumed that the reaction from the outside world to expansion of new and research intensive goods is generally rather passive, whereas the reaction of the U.S. to expansion of imports of traditional goods is more active. This pattern has created a constant pressure towards a surplus on the U.S. balance of payments.

In other words, the author's thesis, which he admits is a special blending of some of the ingredients of the theories which he had earlier criticized, seems to be that there has been an asymmetrical pattern of reaction to increases in U.S. exports and to increases in U.S. imports which is caused by differences in the categories of goods in which the United States and the rest of the world have had a comparative advantage and which has operated in the direction of persisting dollar shortage.

By a careful analysis of U.S. trade statistics since 1890, Hoffmeyer is able to establish, to his satisfaction, the validity of his assumption regarding the comparative advantages of the United States and of the rest of the world. But he admits that it is impossible statistically to test the validity of his other, and key, assumption regarding the asymmetry of the reaction patterns in the two areas. Here he appeals essentially to qualitative arguments which may not be as convincing to others as they appear to be to him. There are some, moreover, who would be prepared to question the implicit assumption throughout

the book that there has in actual fact been a persisting tendency towards a dollar shortage since the late 19th century. Mere reference to the fact that the United States has had a continuing surplus on current account since that time cannot be accepted as evidence of such a tendency.

Whatever its blemishes might be, this is a thoughtful and scholarly book which deserves the attention of students interested in the dollar-shortage problem and in the changing historical pattern of United States foreign trade.

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Business Finance; Investment and Security Markets; Insurance

Corporate Bond Quality and Investor Experience. By W. BRADDOCK HICKMAN. Princeton: Princeton University Press, 1958. Pp. xxix, 536. $10.00.

This is the second of a three-volume series reporting on the findings of the National Bureau of Economic Research corporate bond research program.[1] This volume explores the relationships between bond quality (as measured by various standards in common use) and actual investor experience (as measured retrospectively by rate of default, rate of loss—the difference between the promised and actual yields—and the realized rate of return). The field of investigation is the universe of straight corporate bonds offered during 1900-1943 ($71.5 billion par amount), including those outstanding on January 1, 1900. The study covers all large straight issues ($5 million or more) of railroad, public utility, and industrial corporations, and a representative sample of small straight issues (under $5 million).[2]

The volume begins with a convenient nontechnical explanation of methodology (described more fully in Chapter 1) and a summary of the major findings. Assistance is also given to the reader by a brief summary at the beginning of each chapter throughout the book.[3]

Chapter 2 deals with the behavior of the aggregate group, reflecting the over-all experience of investors holding corporate bonds. Major findings are: (1) On all bonds considered as one portfolio held from offering to extinguishment or 1944, no loss was suffered. Capital losses on defaulted issues were just offset by capital gains on called bonds or bonds selling in 1944 above amortized (adjusted) book value. (2) The lifetime yields realized on the aggregate equaled yields promised at offering—a remarkable achievement considering the period studied. (3) But *within* the full period, marked discrepancies appeared. Capital gains and losses were substantial for bonds issued and held or extinguished in different periods. Experience was best with bonds offered and extinguished before, say, 1932, and with bonds offered and extinguished thereafter. It was poorest with bonds offered before 1932 and still outstanding on that date, and

[1] The first volume is the same author's *The Volume of Corporate Bond Financing Since 1900* (1953). The third (in preparation) is *Statistical Measures of Corporate Bond Characteristics and Experience.*

[2] "Straight" bonds are defined as fixed-income, single-maturity bonds offered by domestic business corporations and held by the domestic investment public.

[3] A summary of the full report is given in W. B. Hickman, *Corporate Bonds: Quality and Investment Performance,* Nat. Bur. Econ. Research Occasional Paper 59, New York 1957.

so exposed to the great depression. Capital losses were general on bonds sold on default, whereas capital gains were equally general on bonds purchased on default and held to extinguishment (called, matured, or reorganized). The study reveals that the long-term investor's principal problem is not to forecast short-term changes in capital value but to predict default experience and major swings in basic yields. The most important contribution here is not so much the major findings from a mass of evidence, but the detailed analysis of the volatile factors that were involved in the whole record when different periods, different industries, and different sizes of issues are taken into account.

Chapters 3 through 8 deal with the relationship between measures of quality (assigned at the beginning of the investment period) and actual investor experience. The typical or basic patterns are pronounced. An inverse relationship between prospective quality and default rates held almost uniformly throughout for all the measures of quality: agency ratings, qualification for "legal lists," market rating (yield spread, or premium for risk, over yields on highest-grade issues), earnings protection ("times-interest-earned" and "margin of safety"), lien position, size of issue, and asset size of issuer. The various measures of quality were generally efficient in ranking issues within industry but were less successful in judging default rates as between major industrial groups. The principal errors of judgment committed by the rating systems arose from a failure to appraise accurately the earnings trends of the different industries and to allow fully for cyclical risks. Nevertheless, within industry, and for issues held over similar investment periods, the rating systems were quite accurate.

An inverse relationship to quality also appeared among the yields promised at time of offering for bonds classified by the various quality measures; the promised yield rose as other quality measures declined. A clear-cut but less pronounced long-run relationship appeared between bond quality at time of offering and the yields actually obtained by investors. The loss rate rose for successively lower grades of bonds and turned from negative to positive for some quality measures.

The most valuable contribution of the study is the very careful analysis of the specific circumstances under which each of the measures of quality was an imperfect predictor of actual results. None of the measures was an infallible guide; but some were much more reliable than others. The errors in agency ratings were primarily due to the variations in the business cycle and to the difficulties in forecasting trends in different industries. Legal listings were useful, but were no guarantee of safety, as witness the experience with many "legal list" railroad bonds. Market rating proved to be a highly successful indication of quality over a short period, but an instable indicator over longer periods; the market was, however, sensitive in reflecting changes in corporations' credit standing. Lien position had little bearing on default risk at the time of offering, and while yield experience was generally in favor of secured issues, the degree of default was largely governed by other factors, chiefly earnings. However, after default, adequate security resulted in favored treatment, as in reorganization. Notable exceptions appeared in the generally positive relationship between size of issue and of issuer, and default experience.

The major conclusions of the study are not surprising to students of investments. The study shows clearly that there is no substitute for quality in bond investments; it also shows that quality and its measurement are to a considerable degree elusive. The painstaking research has, however, produced very significant results by verifying relationships on a mass scale and by indicating the important exceptions that spring from differences in periods studied and in industrial groupings. The statistical bases for the findings are comprehensive and detailed. The period covered includes almost every conceivable general condition that could affect investor experience: prosperity, growth, war, peace, and depression. The research is really impressive.

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Business Organization; Managerial Economics; Marketing; Accounting

Expectations, Uncertainty, and Business Behavior. A Conference held at Carnegie Institute of Technology, October 27-29, 1955, under the auspices of the Committee on Business Enterprise Research of the Social Science Research Council. Edited by MARY JEAN BOWMAN. New York: Social Science Research Council, 1955. Pp. vii, 202. $2.00.

The papers in this volume can be divided into three groups: (1) those explaining decision-making in general terms (Meredith, Simon, Henry, Katona, Lauterbach); (2) those attempting to subtract from reality some simplifications useful in numerical research (Georgescu-Roegen, Modigliani and Cohen, Shackle, Edwards, and Brems); and (3) those explaining particular business decisions in terms of the individual characteristics of the decision-making situation (Mack, Peck, Eisner, Friend, Darcovich).

In Group 1 the principal contributions are by Meredith and Simon. Meredith represents the mind as in a state of continuous expectation based on the hypothesis of no surprise. When this hypothesis is not fulfilled, there is stress, and a new hypothesis is formed. Decisiveness comes from security and past success; the explanation for decision-making should be sought in the past history of the actor. Simon distinguishes between programmed and unprogrammed behavior; in the latter the actor shows the unsystematic searching characteristic of decision-making with uncertainty. Simon suggests that attempting to stay within a zone of reasonableness is more usual than attempting to optimize, given uncertainty. The suggestions of this group are sensible. They appear to provide help for both theorists and empiricists.

The second group deal with familiar simplifications of the operation of a decider's mind. They abstract from reality in order to avoid unwieldy complexity. They are directly concerned with realism of assumptions, and emphasize reasonably satisfying explanation rather than reasonably accurate prediction.

Case studies are among the most interesting contributions in the third group. Mack elucidates the technological reasons for decisions on timing in

the hide-leather-leather goods chain of firms, and Peck shows how relations among types of costs affect inventory decisions of integrated aluminum producers. Peck's study seems coherent without much formal theorizing, and Mack's might have been better without her theorizing.[1] Eisner's work is based on the 1948-50 McGraw-Hill year-end capital expenditures questionnaires. He seeks capital-expenditures predictors whose use is both plausible and *ex post* successful. He also estimates certain accelerator coefficients, adapting theories widely accepted as providing a logical basis for at least first approximations.

Except for Eisner's chapter, there is little connection between theory and empirical work in the present volume. We have no indication of the degree of lack of realism in the assumptions of the members of the second group. Thus, in the principal paper in this group, Georgescu-Roegen deals with the philosophical and mathematical bases for probability. He doubts the existence of the kind of indifference relation needed to cope with multidimensionality of expectations; but neither argument nor empirical evidence is adduced to support his conclusion.

Perhaps the reason for the divorce of theory from evidence in the present volume is that the abstraction current in uncertainty theory is premature. If we already understood many individual decision processes, we might facilitate later work by abstracting significant regularities. But the requisite familiarity with individual decisions is lacking. For the near future it seems prudent to emphasize case studies at the expense of abstraction.

It might have been desirable to include discussion of statistical decision theory, and to have the "as-if" philosophy presented prominently. Nevertheless, the volume provides an interesting picture of much of current uncertainty theory, and the empirical work is valuable.

J. A. Nordin

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Industrial Organization; Government and Business; Industry Studies

Antitrust Policies: American Experience in Twenty Industries. By Simon N. Whitney. 2 vols. New York: Twentieth Century Fund, 1958. Pp. xxiii, 560; x, 541. $10.00.

The task set for Dr. Whitney by the Fund's Committee on Antitrust Policy was to assess "the effect of [antitrust] decrees," and their afterword (II, 441-45) sums up his labors concisely. Twenty industries were selected to represent the major branches of mining and manufacturing (I, 3), and "it was

[1] "Businessmen abhor picayune hazards. I say picayune hazards because many men enjoy a gamble. But the essence of this enjoyment is that it is dangerous, and therefore by definition not picayune" (p. 106). This statement implies that dangerous hazards in business may be welcomed by businessmen (for enjoyment) but that minor hazards are carefully guarded against. Her perverse conception of motivation does not seem to damage her description of behavior.

impossible to study even twenty thoroughly. Nevertheless, the Committee is impressed"—as any reviewer must be—"with the painstaking labor which went into the research, as it is with the difficulties confronted."

The book is very well organized, and the specialist in government regulation and antitrust policy will find it very useful. Whitney has not only gone through the decisions, but has assembled much data from industry publications, published and unpublished monographs, and government reports. It was of course impossible for him to delve into the court records themselves; this was obviously the function of the monograph writers. To be sure, the appraisal of what happened after the case depends in substantial measure on what one thinks was happening before the case, and the facts as "found" by one court or one writer may not be those found by another. But care and objectivity are everywhere in evidence and the fact that one would differ on any particular conclusion is no criticism of the book generally.

Understandably a work this long, by a single author, reads as though he were impatient to stay very long in one place with so much ground still to be covered. Almost every industry is awarded good marks for "performance"—meaning mainly increase in total output and output per man—without the attempt being made to estimate whether it might not have done better or worse under different conditions; or even the extent to which its improvement in productivity was the result of improvements in a supplying industry. Even a hidebound monopoly could scarcely fail the test.

More serious is a failure to state certain issues clearly—let alone resolve them. One such example is in the treatment of integration, particularly vertical integration. The perennial complaint of less integrated firms is that their more integrated rivals have the "power" to drive them out of existence by dropping prices while earning profits on their other activities, Under certain conditions, chiefly relating to entry, it may indeed pay an integrated firm to wage predatory warfare; or integration may simply be a more efficient method; or it may be neutral. The anti-integration argument gets the back of the author's hand in meat packing (I, 84); is taken fairly seriously in petroleum distribution (I, 187); is mentioned in a baffled way in aluminum (II, 93); and apparently dismissed in steel (I, 320), etc. It is briefly summed up though scarcely analyzed (II, 398); in approving a quotation, the author destroys the previous comment about distribution of oil products. This final discussion comes, correctly enough, under the heading of price discrimination; but the opening paragraph (II, 397) confuses discrimination in the economic sense, i.e., wholly net of differences in cost, with discrimination in the Robinson-Patman sense, i.e., mere differentials. The reader comes out as slogan-ridden as he came in.

The discussion of cost-price flexibility also suffers for lack of rigor. The stability of steel (I, 252), cement (II, 289), and farm machinery (I, 309) prices in recession is explained by inelastic demand for the product as a whole; but this is simply the reasoning of the intelligent monopolist. Again, it is not true that steel or cement marginal cost "is likely to be low compared with total cost" (II, 288), except under particular conditions. Here the author misses an opportunity: for price to be raised when marginal is well below

average cost—as has occasionally been true of steel—tells much about the industry's behavior.

The attempted Bethlehem-Youngstown merger gets a paragraph of unqualified approval (I, 267), aside from noneconomic aspects. Perhaps the concerns *are* altogether noncompeting; and perhaps costs *would* be reduced here and by similar mergers elsewhere, but no evidence is offered. No merger is needed for additional steel capacity in the Chicago area. For if the investment is profitable, the existing firms can make it, unless we assume, contrary to fact, that firms of the size of Youngstown or Inland have no access to the necessary funds.

Acceptance of conventional market boundaries is shown in the case of bituminous coal, which is considered unconcentrated and price-competitive, despite short-run inelasticity of demand (I, 419-20). (Contrast with the discussion two paragraphs earlier.) But Whitney notes that freight accounts for 40 per cent of wholesale delivered cost, which very nearly proves—and other data could prove—that coal markets are subject to great spatial differentiation. Along the East Coast, large plants can switch among coal, oil and gas in a matter of hours, and demand is decidedly price-elastic. The relevant market may therefore be wider or narrower than coal. Some coal markets (or fuel markets) are competitive, some dominated by monopoly or monopsony with stable price discrimination.

The proration system in oil is said to lead to a not much higher price in the long run, or perhaps even to a lower price—it is not at all clear which (I, 167). This would be true only under very special assumptions—never specified—about the expectations of producers, trends in the real costs of production, and the cost of holding reserves. Moreover, it ignores the effect of per-well allowables in inducing the sinking of too many wells and a much higher level of real costs. The industry today is much concerned about this waste—here, surely, the economist ought to lead, not lag.

The principal defect of the work, in short, is its neglect of economic theory as a guide in separating fact from impression, and a means of establishing what premises are needed to support any given conclusions. The need to make the criticism speaks well for the book, whose author was not content with a mere tourist survey of old legal battlefields. That he aimed high makes the reviewer demanding, but makes the work of permanent value; that he did not fully succeed means only that there is much more to be done.

M. A. Adelman

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A Study of the Antitrust Laws. By Joseph W. Burns. New York: Central Book Company, 1958. Pp. xiv, 574. $12.50.

Mr. Burns and his associates have drawn the materials for their study of the antitrust laws from the investigations of the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary, 85th Congress, formerly headed by Senator Kilgore. Burns was the chief counsel of the Subcommittee. He is an attorney, not an economist, but his admirable legal scholarship has been supplemented by able advice from some economists on

the subcommittee staff. The volume is not an official report of the subcommittee. Burns' unofficial reflections are remarkably nonpartisan.

Though the study touches upon practically all of the important problems of law and economics that have arisen under the antitrust laws, it does not give equal attention to all. Most of the chapters are written from the viewpoint of the antitrust bar, as one would expect. From the viewpoint of an economist they overemphasize procedural and legal questions at the expense of the substantive economic problems, in a manner somewhat reminiscent of the Report of the Attorney General's National Committee to Study the Antitrust Laws. Nevertheless, the procedural problems are of great importance in the practical enforcement of the antitrust laws, and economists will learn much from Burns' discussion of them. He devotes a whole chapter to the problem of overlapping jurisdiction of the Federal Trade Commission and the Department of Justice. Feeling that the present division of authority is unacceptable, he considers two alternatives: either to give the Department of Justice sole jurisdiction over Sherman Act violations and the FTC sole jurisdiction over certain Clayton Act and Federal Trade Commission Act violations; or to combine all enforcement in a single agency and "as much of the judicial determination as is constitutionally permissible" in a single tribunal. Rejecting the former alternative because of the obvious complementarity of Sherman Act and Clayton Act violations, he argues in favor of a single enforcement agency.

Another problem that concerns Burns, as it does everyone else, is the inconsistency and uncertainty in the antitrust statutes, in their interpretation by the courts, and in their enforcement. The apparent conflict between the philosophy of the Sherman Act and that of the Robinson-Patman Act is the best-known case of inconsistency but by no means the only one. One of the most interesting features of the volume to this reviewer is a summary in the first chapter of replies to a questionnaire that the subcommittee staff sent to all members of the federal judiciary. The judges were asked to comment on various criticisms of the law and its administration and on certain proposals for their improvement. (Those who believe that the law is a more exact and consistent discipline than economics will be distressed by the frequent divisions of opinion among judges on procedural as well as on substantive questions). The questionnaire elicited from several judges some thoughtful analysis of the fundamental philosophy of the antitrust laws, again emphasizing the recurring problems of legal action in dealing with the economic condition of monopoly. Says one, ". . . Does Congress intend to hold liable a person who in good faith and without predatory practices seeks, by morally neutral means, to attain a dominant position in the market?" (p. 21). Says another, ". . . Things will not be very much bettered, until Congress declares what form it wishes industry to take; and . . . no paraphernalia of amended procedure, pre-trial, appeal, and this and that, will in the end be more than palliatives" (p. 59). Obviously, many judges feel that they are being asked to decide these questions without adequate legal foundation, in other words to legislate rather than to interpret law. Burns himself has little to suggest in the way of remedy.

Quite different from the discussion of procedure and specific legal problems is a long chapter (comprising one-fourth of the book) on "Bigness and Concentration of Economic Power—A Case Study of General Motors Corporation." Noting that the Attorney General's Committee was largely silent on the subject of bigness, the staff authors ("directed and supervised" by Burns) develop a detailed picture of the relation of size to market power as exemplified in General Motors. The authors clearly think that the market advantage of General Motors is cumulative. The corporation has entered one market after another by "conglomerate" integration and has gradually achieved a commanding position in each by combining its well-known technical efficiency and progressiveness with aggressive exploration of all market advantages, all opportunities for reciprocal dealing, all advantages stemming from its advanced degree of horizontal and vertical integration. For example, the study shows how General Motors' acquisition and development of the Euclid road-building equipment firm complemented and strengthened its development of diesel engine production to the disadvantage of independent manufacturers of diesel engines. Assuming that the facts presented are accurate and complete, the study of GM does offer a persuasive warning on the growth of size and power in a multitude of markets. (The tone of the chapter is distinctly less detached than that of the chapters on procedure.) The authors hold that the merger with Euclid should have been tested in the courts, under the amended Section of the Clayton Act. They are skeptical that the alleged economies of conglomerate integration outweigh the disadvantages of further concentration. "If the authorities seriously intend . . . [to check] concentration, it would be difficult to envision a more likely case than an important acquisition by General Motors" (p. 424).

The General Motors case study also takes up at length the grievances of the automobile dealers against the manufacturer. Many economists may find it paradoxical that the principal achievement of the antimonopoly Subcommittee was to eliminate from automobile markets the chief remaining competitive element, namely the pressure by manufacturers upon retailers to sell in large volume. As a result of the hearings, the dealers were given some protection against the manufacturers. No doubt too much is made of the dealers' grievances. Yet the story developed here does show how competitive aggressiveness combined with great power can lead to arbitrary and unfair results in market relationships with small dependents.

In the final "recommendations" the study returns to its detached tone—so much so that the recommendations appear meaningless by themselves. For example: "3. Hearings should be held to determine what congressional policy should be with respect to foreign trade" (p. 565). Against the background of the excellent earlier chapter on antitrust problems in foreign trade, however, it is a little clearer what Burns hopes Congress will do. Economists will find the encyclopedic review of law and policy in connection with such topics a very valuable feature of the book.

JAMES W. MCKIE

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Administered Prices: Hearings before the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee, 85th Congress, 1st session, July—November 1957. 4 parts. Washington: Supt. Docs., 1958. Pp. 194; 477; 502; 358.

Administered Prices, Steel:Report of the Senate Judiciary Committee made by its Subcommittee on Antitrust and Monopoly, 85th Congress, 1st session. Washington: Supt. Docs., 1958. Pp. ix, 204.

Congressional hearings on the conduct of major industries are often of considerable interest to practicing economists. They occasionally lay the groundwork for legislation which, for better or worse, has important consequences and, at the very least, bring together information not readily available elsewhere. Congressional hearings also enable economists to gauge how well the results of their research and reflection are getting through to the people that they would influence.

The steel industry has long been a favorite subject for investigation. The most recent inquiry was touched off by the 20 per cent or so increase in the prices of most steel products from January, 1953 through July, 1957, notwithstanding that the industry operated at less than full capacity during this period. While digressions were frequent, the investigation centered mainly about four questions: (1) Do "administered" prices exist? (2) Are they bad? (3) Was the price increase mainly caused by the wage concessions to the steel workers' union? (4) If not, are the major steel companies using monopoly power to exact "unreasonably" high administered prices? The investigation was opened by the examination of four academic economists with no financial ax to grind, moved on to hear the partisan witnesses of interested parties, and was summed up in reports of the majority and minority members of the subcommittee.

The subcommittee sought enlightenment from professional economists on the nature and significance of "administered" prices, calling as its first witness E. G. Nourse. The former president of the American Economic Association responded by striking a note of moderation that Congressmen seem to like. He conceded that "the economic institutions and business practices described as administered pricing grow naturally and properly out of the conditions of modern industrialism and that they may be so used as to promote both economic growth and business stability vigorously and consistently." But Nourse then allowed that he was "deeply apprehensive lest the actual administration of the prices of goods, of commercial services, and of labor are impeding or threaten to impede seriously the full and continuous use of the Nation's productive resources toward satisfying the needs and wants of consumers." Nourse's main fear was that the collusion against consumers practiced by large firms and labor unions would generate a confidence-destroying inflation or entail the use of such monetary restraint as would trigger a recession. As to how this danger could be met he had nothing to urge save the "economic statesmanship" that he has been urging for twenty years.

The subcommittee next proceeded to the examination of J. K. Galbraith who obliged as one would expect with a lucid, novel, and quite debatable dis-

cussion of the tie between administered prices and inflation. The substance of his testimony was that: (a) administered prices are inevitable, (b) prices have risen more rapidly in the administered than in the nonadministered sector of the economy, and (c) firms with administered prices are in a better position to pass on cost increases than firms that sell in more competitive markets. What to do? Galbraith can only suggest that price administrators be called before Congressional committees to justify their more startling increases. The fear of having their avarice exposed will presumably make them more reasonable citizens.

The next witness was Gardiner Means who, unlike the first two witnesses, brought along his statistics to fortify the assertion that prices go up fastest in the administered sector of the economy. His recommendation was a temporary wage-price freeze (apparently to be achieved through moral restraint) while government economists learn more about administered prices.

The subcommittee next heard Richard Ruggles who doubted that so-called administered prices, if they exist, have any economic significance. His testimony was to the effect that inflation has resulted because money wage rates have increased more rapidly than man-hour productivity; that there is no evidence that administered prices have gone up faster than other prices; and that the practice of administering prices can in no sense be said to have "caused" inflation.

As its last disinterested witness, the subcommittee called J. R. Moore who agreed that, in time of general business recession, product prices in competitive industries are probably less rigid than product prices in highly concentrated industries; but the presence of greater rigidity was attributed to the greater power of labor unions in highly concentrated industries. In time of general business recovery, Moore believes that such industries are likely to be soft in their bargaining with labor unions since they have less difficulty in passing any wage increase on to customers in higher prices.

The partisan testimony went much as one would expect. The research director of the steelworkers' union introduced evidence to show that the increase in steel prices far exceeded wage increases granted to steel workers and concluded that the industry "raises its prices to maximize its profits at the highest possible level which it can achieve without loosing its customers to other industries or without calling down the full wrath of the Government and the public." In a brief prepared for the United States Steel Corporation—probably the best piece of evidence presented to the subcommittee—Jules Backman showed that wage rates have risen more rapidly than man-hour productivity in the steel industry in recent years; and he implied that any "undue" increase in the price of steel must be ascribed to this divergence. No doubt Backman came closer to the truth than any one else (though the fact that, in 1957, 11 of the 18 highest-paid company executives in the American economy were officials of Bethlehem Steel creates considerable sympathy for the union's reluctance to accept the blame.)

The majority report of the subcommittee affirmed that steel prices were administered, viewed them with alarm without making definite accusations, felt that the increases in steel prices were "excessive," and called for further

study. The minority report held that the testimony taken "clearly demonstrates that steel is a competitive industry and there is no evidence whatsoever that steel prices are established by other than competitive forces."

The net effect when one reads these hearings is to make one depressed with the state of economics as a profession. Much of the testimony was directed to questions that economists would consider as irrelevant or susceptible to obvious answers. Notwithstanding that all of the scholars, and most of the advocates and Congressmen who participated in the hearings had at least one course in economics not too long ago, it was not even taken for granted that business firms do seek—or should seek—higher profits. The testimony of the experts was too vague and conflicting to afford concrete guidance to Congress. And the published hearings give no indication that anybody's preconceptions about why the price of steel increased between 1954 and 1957 were changed in the light of the evidence gathered. The record contains quite a few miscellaneous facts that may interest a student doing research on the steel industry. This reviewer is unable to see that the hearings serve any other useful purpose.

DONALD DEWEY

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Some Economic Problems of Public Enterprises in India. By PARMANAND PRASAD. Leiden: H. E. Stenfert Kroese, 1957. Pp. x, 244. Fl. 14.50.

India is the cynosure of all who are anxious to see whether a desperately poor country can achieve rapid economic development under a democratic form of government. Because public enterprise has been assigned an important developmental role in India, almost any book that explores problems associated with that subject demands attention. The reader must be warned at the outset, however, that the book under review—although the most substantial to have appeared so far—focuses almost entirely on just two topics: the operating efficiency of public enterprises, and their accountability to Parliament.

The lengthy first chapter, devoted to a motley assortment of "general issues"—including "scope of public enterprises," "uncertainties," and "motives"—is a rather nondescript international survey. The second chapter uses well-known arguments to contrast the advantages of administering a public enterprise as a public corporation set up under special legislation, with the disadvantages of running a public enterprise as the arm of a government department or as a limited-liability company patterned on the model of a private corporation. It is the public corporation, Prasad believes, that offers the best combination of what he posits as the two principal requisites for a public enterprise in a democracy—operating flexibility and Parliamentary control. In the third chapter the author dwells on his two main concerns: the need for functional cost accounting to secure maximum operating efficiency, and the problems associated with accountability to Parliament. In this section he draws on the experiences of other Commonwealth countries and also of the Netherlands and the United States. The fourth is an informative, but purely historical, chapter that traces the reasons for, and conditions attending, the establishment of public enterprises in India as revealed in official and non-official discussions, reports, and plans from 1880 onwards. Prasad concludes

this historical survey with the observation that "the objectives of public enterprises [in India] is to make good the infrastructural deficiencies and lacunae as much and as quickly as possible and to initiate development which will become the basis for the cumulative expansion of the economy. . . . These enterprises should not be regarded as instances of 'creeping socialism'" (p. 125). The last three chapters comprise detailed descriptions of the administration of several of India's public enterprises, intended to exemplify the problems of efficiency and accountability in the context of the three different organizational forms mentioned earlier. (The book, it may be here noted, suffers from poor style, carelessly prepared footnotes and bibliography, the omission of an index, and innumerable typographical errors.)

Prasad stresses cost accounting as the principal means of securing operating efficiency—when it is used for the establishment of normative costs and for the construction of normative and flexible task-setting budgets. His description of "proper" cost-accounting and budgeting procedures leans heavily on theories and techniques developed in recent years in Holland, where academic and official circles have been actively engaged in refining efficiency controls for public enterprises. He repeatedly points to the contrast between the techniques that he suggests and the present orientation of controls in India towards—in his terminology—"juridico-financial" considerations. Prasad also laments the fact that Indian public enterprises have not been granted that minimum degree of freedom from government control that he considers essential for flexible, efficient, businesslike management. He finds that even those enterprises that have been established as public corporations tend to be gradually drawn "into the arms of the Governmental machinery" (p. 195). Indeed an important example, which came to light after Prasad's book was written, stirred up much excitement in India and led to the resignation of the Finance Minister; this was the case of the State Insurance Corporation, which in 1957 made certain much-criticized investments at the bidding of the Finance Minister.

It is unfortunate that the author chose to restrict the book's coverage as much as he did, even though the fact that it was initially a doctoral dissertation makes the narrow scope understandable. Those who are interested in the functions and operations of public enterprises in India will keenly miss any reference to such vital matters as the relations of public enterprises with their workers, the considerations that enter into the determination of prices charged by public enterprises, and the problems associated with the rational utilization of the nation's resources (the word "inflation" seems to appear in the book just once, on the penultimate page). Most to be regretted, however, is the lack of a rounded discussion on the need to find substitutes for the spur of competition and the profit motive as incentives for increasing efficiency. Certainly every author has the right to delimit his subject as he chooses, but here the concentration on the mechanics of control to the complete neglect of other considerations invests the presentation with an aura of unreality and naïveté that may unfortunately turn aside readers who might otherwise have learned something of value.

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Land Economics; Agricultural Economics; Economic Geography; Housing

The Efficiency of the Coal Industry: An Application of Linear Programming. By JAMES M. HENDERSON. Cambridge: Harvard University Press, 1958. Pp. xii, 146, $4.50.

The development of a model of a particular sector of the economy is usually undertaken with a view toward achieving descriptive accuracy. Most such studies share the general orientation of W. Leontief's work in input-output analysis, and seek to contribute to the increase of knowledge of the actual production capabilities of the economy. They focus on the economy as it is—or as it is expected to be in the future—rather than on the economy as it should be. This study departs from the general practice, for the tools of sector analysis are here applied in an effort to answer the question: What is wrong with the coal industry? The model which is formulated is explicitly normative, and departures of actual results from those generated by the model are identified as failures of free markets to achieve efficiency. The resulting diagnosis of the ills of the coal industry will not come as a great surprise to anyone, but the detailed information presented will be of interest to those who are particularly concerned with the future of the industry. The most interesting feature of the book is the persuasive case it makes for linear programming as a device for obtaining quantitative estimates of the extent of departure from the efficient solutions generated by perfect competition. In this connection, the fact that the empirical results corroborate existing (qualitative) views as to the problems of the coal industry is certainly to be regarded as a virtue.

The model emphasizes the spatial distribution of demand and capacity and the fact of differing extraction costs. Unit extraction costs are assumed—with some supporting evidence—to be constant up to a definite capacity for each deposit. Unit costs of transportation are constant for shipments from a particular deposit to a particular consuming area. The technique for computing solutions to the linear programming "transportation problem" is employed to yield a system of deliveries which meets given spatially distributed demands and minimizes total extraction and transportation costs. Optimum solutions are computed for 1947, 1949 and 1951, employing historical values of capacities, unit costs and coal consumption for those years. The empirical model distinguishes 22 deposits and 14 consuming areas.

The absence of data on actual shipments restricted the comparison of actual and efficient performance to measures based on output figures and total costs. The general conclusion is that inefficiency increases when output declines—as a result of a failure to concentrate the reduction in the high-cost areas—but this increase is relatively minor compared to the persistent secular inefficiency of the industry. The author analyzes both the secular and the cyclical element. One explanation for the latter which he overlooks is the fact that unit royalty payments may be determined by long-term contracts. To the extent that this is true, the low real-cost producer is just as vulnerable to short-run declines in demand as his high-cost competitor, and the market forces making for efficiency are thwarted.

The core of the book was provided by Henderson's two articles on the coal industry which appeared in *The Review of Economics and Statistics* (Nov. 1955 and Feb. 1956). The principal additions are a more complete discussion of the theoretical model and the methods by which solutions to the transportation problem are computed, and an examination of possible remedies for the problems of the industry. The exposition of the transportation problem is competently done, but the fact that such expositions are now available in many other sources tends to reduce the value of this addition.

The ultimate test of a normative model of this type comes when (and if) the policy recommendations derived from it are put into effect. Lacking such a test, one is forced to fall back on subjective evaluations of the quality of the data, the acceptability of the simplifying assumptions, and the plausibility of the results. The reviewer's reaction to this model is generally favorable. Perhaps, however, the important question is not whether the model is "right," but whether more adequate tools for organizing the information relevant to policy decisions are available. In view of the complexity of the problem posed by spatially distributed demands and capacities, the answer probably is no. The author's case for analysis of this type is valid, and we can concur in his recommendation that further applications of the model be made.

S. G. Winter, Jr.

The Brookings Institution

Raw Materials—A Study of American Policy. By Percy W. Bidwell. New York: Harper Brothers, for Council on Foreign Relations, 1958. Pp. xvi, 403. $5.95.

This book, published for the Council on Foreign Relations, takes up where the reports of the 1952 Paley Commission left off. With the United States market as the focus, a succinct picture is presented of the production, marketing, and regulation of major raw materials. The factual summaries, which usually carry the reader up to early 1958, are solidly authoritative, having been prepared with the usual Bidwell scholarship. The advice and information provided by an impressive group of business, governmental, and academic experts, such as the Council on Foreign Relations typically musters in support of its staff work, seem to have been well and wisely used. And the simplicity of tables and charts is a joy to the reader.

This brings us to the "however" stage of the review. Those who are looking for a fresh re-evaluation of raw materials policy will not find it here. Three introductory chapters raise the major issues—those of military defense, domestic economic growth, and international relations. And a final chapter appears to return to the issues. But the final evaluation really does not draw upon the intervening factual chapters for its conclusions.

In view of the grand design of the book, it was inevitable that there should be an unbridged gap between factual presentation and policy evaluation. One simply cannot evaluate the national policy on raw materials principally through a case-by-case analysis of the situation in each raw material, particularly when the analysis is focused primarily on the United States market. To be sure, one has to know the main facts with regard to such materials as a

prerequisite to the shaping of a workable policy. But the facts about specific raw materials only begin to provide the background for a sensible policy.

Take the case for commodity stabilization agreements, a case which has been strongly urged from various quarters with respect to copper, lead, zinc, and wool. To evaluate that case, one has to consider a wide range of questions: how these products fit into the domestic economies and payment positions of other countries; how our political interests vis-à-vis such countries would be affected by such stabilization; how such stabilization schemes could be implemented realistically; what the precedent-making implications of such schemes might be for the rest of trade policy. But unhappily none of these issues is really covered and the subject eventually is dismissed in ten lines, on the assertion that though such schemes may help exporting countries, they would hurt the importing countries more.

The policy evaluations in the field of defense are equally unsatisfying. To be sure, there is an appropriate recognition of the existence of nuclear armament and of the changed nature of the defense problem. And the author does briefly raise the question whether our stockpile is being provided with the goods that would be needed for a speedy recovery after the first crippling attacks. Yet most of the discussion is conducted on the implicit assumption that the nature of warfare has not really changed very much after all. The author insists, for instance, that the St. Lawrence Seaway is "free from the danger of enemy action," a reassuring but archaic notion. Elsewhere—in a discussion of the defense problems attending our oil policy—the possibility of nuclear warfare is explicitly excluded from the calculations. If we can really afford to exclude nuclear warfare and to operate on the assumption that the military problems of the future simply run the gamut from Korea to Lebanon, then much of what we are doing with raw materials in the name of military preparedness is a sham.

There is another feature of the book on which the prospective reader is entitled to fair warning: the limited scope of the treatment of future supply and demand conditions. Raw materials policy turns centrally on the future availability of exhaustible products. A projection of future availability involves a series of tough factual questions and projections: prospective supply and demand must be probed; possibilities for substitution must be closely examined. And these examinations must take place in a framework broad enough to encompass the future performance of the world economy. There is a valiant stab at this set of nasty questions, but one which necessarily is far more superficial than the Paley Commission was able to make. This is the sort of critical question whose answer demands an attack on a major scale, beyond the capacities of the lone investigator. As a result, one will not find here the kind of solid stuff needed to ruminate on the outcome in the race between the exhaustion of raw materials and the discovery of new sources and new substitutes.

One needs only to relabel the book and restate its objectives in order to welcome it as a real contribution to the contemporary literature on raw materials. As an account of the postwar efforts of producers in the United States to protect themselves from foreign competition, the book comes off well and

constitutes a welcome companion-piece to the other Bidwell works on the subject of American protectionism.

RAYMOND VERNON

New York, N.Y.

Du Kolkhoze au Sovkhoze. By DÉMOSTHÈNE NACOU. Paris: Editions de Minuit, 1958. Pp. 277.

This is the first volume of an intended "trilogy" concerning the working principles and the "operational" system of Soviet agriculture. This book deals with the development of the collective farms (*Kolkhozes*) in historical perspective, and their "evolution" toward the state farm (*Sovkhoz*). A second volume, in press, focuses on the organization and remuneration of labor in agriculture; while a third volume, in preparation, is to examine planning in agriculture and in the industries depending on it.

The present volume falls into two basic parts. Nacou presents first, in a detailed fashion, the data concerning the precollectivization forms of agricultural organization, the nature and impact of the collectivization drive and the forms of agricultural organization up to the reforms currently introduced by N. S. Khrushchev. The second part of the volume discusses the optimum scale of agricultural exploitation, the state pressures in favor of concentration into large-sized farms and the failures in carrying through the early 1950 plan of "agro-towns" (*Agrogorods.*) An epilogue enumerates more than it evaluates, in some thirty pages, the Khrushchev reforms.

An agronomist by profession, Nacou is at his best when he discusses such problems as the optimum size of the collective or of the state farms in the technical conditions prevailing in Soviet agriculture. He is less fortunate in his historical analysis, and seems to labor at a disadvantage when he attempts to draw some general conclusions concerning the discrepancy between means and results in Soviet agriculture. Apparently he is ignoring the basic English works of L. E. Hubbard, Naum Jasny and Lazar Volin. He seems to be satisfied—and so apparently is P. Fromont who writes the introduction—with the generalization that the failures of Soviet agriculture stem from the psychological opposition between the individual tendencies of the peasantry and the centralizing tendencies of the state. No inkling is to be found in the book of the role of prices in agriculture and of the possibility of bringing about substantial changes in this stagnating sector of the Soviet economy in any other way than the transformation of the *Kolkhoz* into either a cooperative or a state farm. The specific position of the collective farmers as residual claimants to their own collective output seems not to be clearly grasped, while the prevailing system of payment of labor on the farm—the work day (*trudoden'*) system—is idealized as the last link between "harvest and remuneration" distinguishing the peasant from the salaried worker.

Soviet agriculture is currently experiencing the most significant changes since the collectivization of the 'thirties. Foremost among these changes are the discarding of the past cumbersome and paralyzing systems of agricultural procurement consisting in obligatory deliveries at below-cost prices, deliveries in kind to the state-owned Machine and Tractor Stations (MTS)

and deliveries on "contracts," in favor of a system of single deliveries, still based on assessment of the land-surface of the collective, but paid for by zonally differentiated prices on a cost-plus basis. Along with these changes also go the disbanding of the MTS, the sale of agricultural machinery to the collectives and the "transfer" to the latter of the MTS personnel. In the relations between the newly revamped *Kolkhoz* and the state, the price lever is to be used more effectively than in the past. Once the state has accumulated stocks, it plans to buy only from the most "efficient" *Kolkhozes* and force the less efficient either to increase rapidly their productivity and specialize or merge with better endowed *Kolkhozes*. Whatever might be the basic psychological conflict between the peasant and the state, which this reviewer does not deny, a more imaginative use of the price system could and very probably would affect deeply the relation prevailing in this sector of the Soviet economy.

NICOLAS SPULBER

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Labor Economics

Human Resources: The Wealth of a Nation. By ELI GINZBERG. New York: Simon and Schuster, 1958. Pp. 183. $3.75.

In this report on the work of the Conservation of Human Resources Project established at Columbia University in 1950, Professor Ginzberg of the Graduate School of Business Administration declares that in the absence of positive government assistance too little capital will be invested in improving the quality of the country's greatest single asset, its people. "Adequate instruction for truly developing the potential of the population . . . is at the center of the human-relations problem" (p. 35).

The project is concerned with identifying the major sources of waste in this area and only incidentally with policy recommendations. Policy issues are more particularly of concern to the National Manpower Council which is also directed by Ginzberg. Four main sources of waste are identified and discussed: unemployment; underemployment; inadequate training; and imperfections in the labor market, particularly those resulting from discrimination on account of race, color and sex. The discussion is penetrating, perceptive and wide-ranging as is to be expected in an interdisciplinary venture of this sort. The fact is rightly stressed that some of the most serious wastes are emotional and psychological rather than narrowly economic. This book and the more detailed studies undertaken by the Project add to our understanding of the problem of growth within a framework of freedom.

While this book contains no direct policy recommendations I am nevertheless disturbed by the policy implications which are implicit in Ginzberg's definition of underemployment—"situations where individuals are unable to find a satisfactory, productive job in the community that pays at least the minimum wage prescribed by Federal or state law" (p. 41)—when taken in conjunction with his dictum that only as "every individual has the right to work can the United States be true to its heritage and fulfill its promise" (p. 46).

"I have rights," wrote J. M. Clark, in *Social Control of Business*, "only in so far as other people have duties toward me" (p. 91). If there is a right to work then someone, somewhere has a duty to provide work. Private persons in many parts of the country cannot discharge this duty within the terms set by Ginzberg's definition of underemployment, since the federal minimum wage is substantially higher than the effective minimum in many small communities particularly in the rural South. Nor can these communities discharge the duty. Only the federal government with its power to tax, to inflate the currency and to protect the national market from foreign competition, is in a position to do this. Would it not be better to talk about the "opportunity" rather than the "right" to work and to refrain from defining suitable work with reference to particular communities and a legal minimum wage?

A final point. Ginzberg's criticism of recent educational trends strikes me as so right and so effective that I would hope that under his direction the National Manpower Council might be willing to examine sympathetically a proposal made by Milton Friedman: that the administration of education be returned to the private sector of the economy while the state continue, in recognition of the existence of uncompensated social benefits, to provide tuition assistance.[1] Freedom of choice would be restored to parents and competition would encourage experimentation and progress. Any study of the workability and probable long-run consequences of such a proposal will have to deal with the amount and duration of the tuition assistance. My own thought is that the tuition should be just sufficient to provide that minimum of skill and literacy needed to prepare for citizenship and to permit those who desired to go further to do so on their own steam. If Ginzberg is right in saying that a skilled worker can expect to earn a quarter of a million dollars more during his lifetime than an unskilled worker (p. 159), it should not be beyond the wit of man to devise private financial institutions which would invest on mutually profitable terms in the further education of all those who possessed the necessary aptitudes, character and ambition, and at the time when they were prepared psychologically to get the maximum benefit from the instruction.

JOHN V. VAN SICKLE

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Labor and the New Deal. Edited by MILTON DERBER and EDWIN YOUNG. Madison: University of Wisconsin Press, 1957. Pp. xi, 393. $6.00.

This volume is a joint project of twelve members of the department of economics of the University of Wisconsin and the Institute of Labor and Industrial Relations of the University of Illinois. It is a collection of "more or less independently written essays designed to analyze and interpret selected aspects of labor relations and the labor movement during the New Deal years and their implications for the present." No attempt is made to provide a comprehensive account of the period. Rather, the topics selected were those which appealed to their authors, with a number of other important subjects left un-

[1] "The Role of Government in Education," in *Economics and the Public Interest*. R. A. Solo, editor. New Brunswick, N.J., 1955.

touched "because of the desire to prevent the volume from becoming too large."

The context of the volume can best be gauged by a brief review of the topics treated by the several contributors. The opening essay by Milton Derber seeks to trace the patterns of trade union growth during the New Deal and to examine the implications of this expansion for subsequent years. Edwin Young follows with a discussion of the forces that brought about the split in the labor movement, their consequences and the events that led to the ultimate merger between the AFL and CIO. Bernard Karsh and P. L. Garman then explore the role played by left-wingers and communists in the activities of the unemployed and the new industrial unions in mass-production industries. Each of these three chapters stands on its own feet, with relatively little integration between them.

The next four chapters, which deal with the role of the federal government, present a much greater sense of unity and to a degree are some of the more interesting in the book (at least to this reviewer). Murray Edelman reviews the influences and pressures responsible for policy formulations with regard to labor during the New Deal period. The other three chapters are more specialized, with R. W. Fleming discussing the Wagner Act and its implications, Elizabeth Brandeis reviewing protective labor legislation and E. E. Witte examining social security legislation.

A different facet of labor is examined in the next two chapters. R. C. Wilcock touches on the changing patterns of management thinking and behavior vis-à-vis labor organizations, while Doris E. Pullman and L. R. Tripp examine collective bargaining as it was affected by the National Labor Relations Board policies. The final essay in the book by Selig Perlman seeks to tie the whole together by providing a broad historical and philosophical perspective for evaluation of labor developments of the New Deal era.

The main purpose of the volume, as stated in its foreword, is to provide the reader with interpretations of available material rather than to seek to uncover new facts. Thus, while the essays contain little that is not known to the serious student of labor history, they provide useful supplementary reading material for college courses dealing with labor and labor relations. This is, of course, not to suggest that the more mature reader may not find points of disagreement with specific portions of individual essays. This is to be expected because the period under review is one of the more colorful and controversial in American history. Passions are still running high and the present reviewer is not immune to them. Thus, for example, he is disturbed by the overreliance by some of the essayists on convention speeches or testimony before public bodies for the evaluation of trade union thinking. Unquestionably these statements do reflect trade union attitudes to a degree, but they do not tell the full story. One cannot fully gauge organizational thinking from public expressions alone; this is true of all human institutions. A deeper probe, which would have reviewed trade union actions and the pressures which shaped them, would have yielded additional insights.

Lazare Teper

New York, N.Y.

Labor Problems in the Industrialization of India. By CHARLES A. MYERS. Cambridge: Harvard University Press, 1958. Pp. xvii, 297. $6.50.

Studying patterns of industrial relations in developing economies has become the labor economist's "corner" in the current concern with economic growth. The full range of problems arising in industrialization in the complex of labor-management-government relations cannot be compressed or dismissed. The area would be well worth extensive and detailed inquiry even were all the questions subsumed under the old formulation: Are planning and free collective bargaining compatible?

India, because of its strategic position, size, economic complexity, Western orientation, accessibility and because of the progress it has already made, has benefited most from the attention of American labor scholars. The works of Kennedy, Lamb, Morris, Thorner, as well as my own, have already introduced Indian labor problems to the American reader. Myers' book brings together the findings of the previous studies (the book's documentation, footnotes and index are most helpful) and adds to them his own interpretations as well as the fruit of the studies of the Inter-University Study on Labor Problems in Economic Development of which this volume is the first "country" study. With it we have available a good deal of careful and precise description as well as an incisive analysis of the problem and its setting.

Among areas discussed in detail is the emergence of the labor force and of organized labor. The limits of industrialization are implicitly indicated by Myers' estimate of the present labor force at about 7½ million or about 5 per cent of those reported as economically active. The development of organized labor is well summarized and its limitations clearly expressed. Steps necessary in building an effective managerial group are central in the discussion of the management side of the Indian triangle. Rightly Myers views improvements in this area as a prerequisite for industrialization.

The picture that emerges in Myers' summary is of a system in which "government [is] squarely in control of the direction which labor-management relations may take in India" (p. 172). Its interest in developing free collective bargaining in the future is viewed as axiomatic. Areas and instances of management and labor collaborating with government to develop viable collective bargaining are noted scrupulously and sympathetically. The difficulties are never minimized.

The country's commitment to rapid economic development with the necessary emphasis on capital formation at the expense of contemporary consumption means that the government must constantly resist pressures to share with the masses the early gains of industrialization. Potential losses due to industrial disputes are a source of grave concern. Yet the social standards of more advanced countries and the goals of free bargaining and strong trade unions exert their influence even though management's dealings with labor "is still characterized by authoritarianism and paternalism" (p. 176), and even though, in spite of unions' pressure to achieve it, "direct collective bargaining with employers is still infrequent."

To keep on an even keel, the government has made compulsory adjudication the cornerstone of its labor policy and Myers concludes that "in its pres-

ent stage of economic development, India cannot afford the period of labor strife which is the usual prelude to more mature collective bargaining relationships" (p. 182). This assessment of the Indian situation is valid. With Myers, this reviewer refers the impatient reader hankering to scrap compulsory adjudication to the International Labor Organization's McNair Report which indicates how limited free collective bargaining is in the Western World.

But what about the future? With unions unable, management essentially unwilling, and the states all too ready to rely upon adjudication, will India ever move to free collective bargaining? Here Myers does not provide an answer. He notes "encouraging signs" but in ultimate analysis the reader is left on his own. It seems that it all hinges on the government's *will* to achieve free collection bargaining. However, one need not be too concerned with the Indian situation. The present government's over-all will to democracy appears assured and Myers' evaluation justified. But what are the determinants of a government's policy of encouragement of free collective bargaining?

When we extend our inquiry beyond the Indian boundaries we find little help in Myers' work. Although in the Preface it is stated that "this volume illustrates an analytical framework which may fruitfully be used to illuminate the development process generally," we find no such thing. On the contrary the peculiarities of the Indian situation are always explained in terms of the distinctive features of the Indian context rather than in the context of economic growth. This is best exemplified by the way in which the problem of labor force "commitment" is handled. Commitment to industrial life is generally assumed to be important. Indeed, the extent of this commitment in many countries is unknown and often debated. Here Myers helps little by concluding that Indian industrial workers are "partially committed" (p. 53). What is partial commitment? When is a work force fully committed? How can the concept of commitment be made more nearly operational?

OSCAR ORNATI

The New School for Social Research

Industrial Relations in Postwar Japan. By SOLOMON B. LEVINE. Urbana: University of Illinois Press, 1958. Pp. xiii, 200. $4.25.

The Japanese labor movement is usually said to date from the formation of the *Yuaikai,* The Friendly Love Society, in 1912. The advances of the friendly lovers toward autocratic and paternalistic managers, ran afoul of the Peace Preservation Law and the national police saw to it that labor organizations in prewar Japan were well contained. At the peak of union membership in 1936, only 420,000 were enrolled, about 5 per cent of the industrial labor force.

When the occupation authorities lifted the lid in postwar Japan, a phenomenal growth resulted. Between the time of surrender and early 1949, the number of Japanese unionists grew from zero to about 7 million. More than 50 per cent of the labor force was organized. There were, for a variety of reasons, setbacks thereafter, but today there are approximately 36,000 unions in Japan with 6.6 million members or about 37 per cent of the industrial labor force.

Professor Levine tells the remarkable story of Japan's postwar labor resurgence with penetrating insight and special competence. Associate professor of

labor and industrial relations at the University of Illinois, he is one of the few American scholars who possess the rare combination of industrial-relations expertness and knowledge of the Japanese language and culture. The high quality of this work makes it a real contribution to the growing body of knowledge of industrial relations systems in various countries of the world.

In the first chapter he deals briefly with the historical and environmental context of present-day industrial relations in Japan. In Chapter 2 he deals with the relationship between the managerial system in Japanese industry and the policies, attitudes and approaches of employers toward their workers. Chapter 3 examines in considerable detail the prewar origins and postwar growth of Japanese labor unions; and Chapter 4, the structure, functions and ideologies of this movement. Chapters 5 and 6 deal with the interrelationship of employers and trade unions, the former in terms of private collective bargaining and the latter in terms of the role of government. A final chapter summarizes the character of industrial relations in postwar Japan and offers observations on its future course.

Two features stand out—the development of *enterprise* unionism and the dichotomy in the labor movement between economically minded enterprise unions and the politically minded national labor fronts. Of enterprise unionism, Japan's distinctive trade-union concept, Levine declares (pp. 90-91):

> The structural feature most characteristic of Japanese trade-unionism has been its "enterprise" basis of organization. Probably more than 85 per cent of all basic union units, embracing almost 80 per cent of total union membership, are organized along enterprise lines; that is, their members are confined to a single shop, establishment or enterprise. . . . The "enterprise," or enterprise-wide, union typically includes all branches and plants of a firm whether engaged in the production of single or multiple lines, whether in one or several industries. In other words, it usually follows the structure of the enterprise entity.
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> . . . . .
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> In appearance, the enterprise union resembles the local of an industrial union, or an "intermediate" organization like the Ford or General Motors departments of the United Automobile Workers in the United States. However, the similarity ends about there. The essential distinction between the enterprise union and the local industrial union is that the former is a unit, in and of itself; it is not merely an administrative component of a national union, nor is it simply an "inside" independent company-wide union. Although it is essentially autonomous, in most important cases it formally joins with other enterprise unions into national, regional or industrial federations.

The basic objective of an enterprise union is to advance the economic status and security of the "permanent" workers. A major characteristic is its all-inclusiveness. More than 60 per cent of all the unions are "combined" organizations in that they include both white-collar and production workers. The difference in approach between the national federations and their enterprise union components is significant. The former focus on broad across-the-board egalitarian political appeals designed to interest a diverse membership. Thus they are either socialist or communist in outlook. The enterprise unions, on

the other hand, are largely absorbed in their own local situations, in the attempt to win concrete economic concessions from reluctant managements. Often they are apathetic to the political activities of the national federations.

It is refreshing to come upon a book which attempts to understand why an Asian people behave the way they do within their own environmental context. Levine does this quite successfully and he skillfully avoids the common pitfall of blatant pronouncements of what they should or should not be doing by standards related to another culture and other historical circumstances.

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Labor. By NEIL W. CHAMBERLAIN. New York: McGraw-Hill, 1958. Pp. viii, 625, $7.00.

With so many textbooks already available for introductory courses in labor economics, and bound by a conventional list of topics urged upon him by publishers desirous of serving the purpose of the largest possible number of instructors, it is difficult for an author to distinguish his work from those that have come before. Collective bargaining, the aspect of labor economics in which he has done extensive writing and research, has been used by Neil Chamberlain to give both a freshness of approach and the needed integration that texts in this field often lack. Some authors have attempted use of the market as the focus of their analysis; to this reader, collective bargaining broadly conceived is much more satisfying as the theme that ties together labor history, union structure, management prerogatives, social security, wages, etc. The good writing and thoughtful analysis of much of this book may be due in large measure to the fact that parts of it were prepared originally for other audiences and not written as chapters of a formally balanced text. Some may find this a shortcoming.

Chamberlain states his central theme in this way. "Collective bargaining is a power relationship. The resolution of differences between union and management rests on the balance of the relative bargaining power of the two parties. The power aspect of industrial relations is fundamental and inescapable."

The objectives of security on the union side and efficiency on the management side are particularly well defined. Chamberlain describes in some detail management's aspirations and its concern about prerogatives, and wisely concludes that the essential management function is coordination of all bargaining, both within management and between management and labor. The chance to initiate and innovate must be management's reward, even though a static concept of management's prerogatives must be sacrificed. On every issue, but especially on those dealing with the impact of unions upon labor mobility, productivity, wages, and labor monopoly, he summarizes briefly and well other writings in the field as well as giving his own opinions. In the process of presenting other points of view, this method reviews a good deal of the literature in the field for the beginning student.

Few of Chamberlain's conclusions presented in his last chapter are either new or startling; nevertheless he performs a valuable service in stressing the

importance of the grievance procedure to industrial government and in calling attention to the opportunity for union leadership in the field of social invention as bargaining units and their impact increase in size and scope. Concerning the economic impact of unions, Chamberlain finds that they have reduced labor mobility little, had practically no effect on productivity, made slight relative wage gains for their members, and will have some inflationary effect on the economy.

Although not all aspects of labor problems are treated in this text, it and the book of readings designed to accompany it, deserve the careful consideration of anyone looking for a text in a basic labor course.

EDWIN YOUNG

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Work and Society. By EDWARD GROSS. New York: Thomas Crowell, 1958. Pp. xvi, 652. $6.75.

Planned as a textbook for the growing field of industrial sociology, the sixteen chapters and over six hundred pages elaborate on various facets of a four-category "conceptual framework" for analyzing job tasks and worker relationships in farming, restaurants and factories. These categories are: the Institutional System, the Status and Authority Systems, the Career, and the Occupational Work Group. One-third of the text is devoted to discursive investigations of the subgroups in this "conceptual framework."

Over 1,000 numbered bibliographical addenda to the chapters attest to both monumental winnowing of the literature and to the expressed belief that the study of man as a worker is a "legitimate theoretical area" within sociology. The largest chapter, "The Career," lists 208 references.

The chapter called "The Factory Work Group," reports on "what we know, reliably, from research findings." Professor Gross' bias focuses attention on "findings that admit of wide generalizability." Nevertheless, there are many generalizations that seem unconnected with reliable research findings, particularly in the areas seemingly better known to professional labor economists and business personnelists.

A belief in the value of a comparative approach to the sociology of occupations leads the author to present a picture of occupational and cultural milieus of workers on the island of Dobu near New Guinea as contrasted with similar worker and society interrelationship in County Clare, Eire. These farm-type occupational and cultural patterns of interaction are thought to give fruitful insights into many phases of the working-man's behavior.

In the special patois of many sociologists and group dynamicists, some of the by-culture-structured topics investigated are: occupational classifications and trends, work structures and complexes, societal status and authority symbols and determinants, cultural perspectives in career selection, occupational personality and mobility, and colleagueship and the work group. Additional operational concepts dealt with are: group approaches to motivation of workers and the influence of the work and economic complexes in structuring patterns of work-worker relationships. The term "symbiosis" is introduced from the author's own research to explain the signifiance of the interdependence necessary in inducing cooperation among workers.

A seeming departure from the carefully developed methodological tool seems evident in the last two chapters dealing with "Union Work Relations" and "Ethnic Relations in the Work Situation." Description and analysis in the latter depict a seemingly greater concern with ethnic matters than with the field of labor relations.

The major in sociology, using this book, is shown a useful tool for analyzing some "work and society" situations. He gets much erudition and more of a sociological scientese than in similar efforts by Dubin. There is also a tenddency to accept worker statements which rationalize certain aspects of their attitudes and behavior as true when they may well be a form of phony philosophizing—behavioral braggadocio.

ALBERT T. HELBING

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Population; Welfare Programs; Standards of Living

Consumer Behavior, Research on Consumer Reactions. Edited by LINCOLN H. CLARK. New York: Harper & Brothers, 1958. Pp. viii, 474. $6.50.

Aside from an invaluable bibliography, the articles in this volume focus loosely on the process of changing consumption patterns. Successful economic growth, whether in underdeveloped countries or in mature economies, requires innovation by consumers. Rising living standards are too often described as dependent on capital formation, industrialization, foreign investment, increasing productivity, and other changes in the production sector of the economy. Frequently overlooked are the changes in consumption: families living "better" than their grandparents, consumers experimenting with new products, the required relation between technological change and a change in tastes and preferences, with an altered pattern of consumption choices. Economics needs a parallel to Schumpeter's theory of the innovating entrepreneur, an analysis of the innovating consumer; and much material shedding light on this little-studied process appears in the book.

The 130 pages devoted to James Morgan's "A Review of Recent Research on Consumer Behavior" make this volume required for any economics library, or any student in the field of consumption economics. Current research in this field covers a wide variety of interests and approaches, ranging from Modigliani's or Friedman's theories of the consumption function to experiments revealing consumer preference for brown eggs or tart orange juice. In nearly every case, however, the economist is forced more or less closely toward psychology and sociology, which he may ignore uneasily, or which he may invade with varying degrees of success, following a precedent set by Adam Smith, Marshall, and Keynes, to name a few. For those with guilt complexes or simple intellectual curiosity about the relation of economics and psychology in the field of consumer behavior, Morgan provides a useful introduction to research findings by suggesting that economists and psychologists work on different levels—the economists with aggregates, the psychologist with individuals—and by fitting many psychological theories into familiar economic structures. His review of current research concentrates on that "most directly relevant to major consumer choices . . . and to dynamic rather than static

explanations," and thus provides a useful guide through the forest. The trees are well represented by approximately 1,000 references to books, articles in learned journals and trade papers, and reports of government agencies or research organizations. Although Morgan insists that the bibliography is incomplete and limited, being restricted to recent empirical studies on consumer behavior, his list, annotated in most cases, remains an impressive contribution. I wonder why this valuable reference was not published separately.

In attempting to explain how consumption patterns change, we may first look at how consumption patterns differ, both over time and among countries. Faith Williams' article on international comparisons includes a useful bibliography, listing 175 reports of surveys of consumer expenditures in 65 countries since the second world war. Her comments point out the weakness of comparing consumption among countries by average or aggregate figures, since these obscure the effect of income distribution, family size and composition, and occupation. Household expenditure surveys, which use these and other variables to classify families, provide data for a more realistic appraisal of the cost of living in different countries, or of the success or failure of various economic policies.

Her remarks apply significantly to the paper by Irving Kravis, "International and Intertemporal Comparisons of the Structure of Consumption," which attempts to show the influence of income, geographical proximity, stage in economic development, and other characteristics upon the consumption pattern of a country. Kravis' method, calculating the percentage distribution of deflated per capita consumption expenditures on broad categories of items, is exactly what Miss Williams has warned against. Yet his many observations (over 50 for 15 countries) show marked differences in consumption patterns which are provocative to the reader. For example, the lowest percentage spent on rent was 2.5, in Italy in 1950, and the highest was 19.1, in the United States in 1909; the lowest percentage spent on clothing was 7.4, in Egypt in 1938, and the highest was 17.0, in the Netherlands in 1950. Kravis concludes that differences in consumption patterns may safely be attributed to differences in real per capita incomes when the relation appears both over time and space. The income position makes the 1950 consumption patterns in France, Germany, Italy, and the United Kingdom resemble that of the United States in 1909 more closely than that of the United States in 1950. On the other hand, Canadian 1950 consumption expenditures parallel the U.S. 1950 consumption expenditures more closely, suggesting to Kravis that geographical proximity may outweigh the effect of income as consumption patterns develop. While the article develops some ingenious analysis, Miss Williams' remarks force the reader to query Kravis' use of average per capita consumption expenditure data. Certainly the distribution of income varies widely among the 15 countries, Egypt and Italy for example showing a much greater disparity of consumer incomes than the United States or Denmark. For that matter, the distribution of income in the United States has altered significantly between 1909 and 1950. Family size and composition and other variables, to say nothing of different tastes and preferences, may also account for some of the differences in expenditure patterns. Obviously differences in area as well as income explain the tenth of all consumption spending devoted to the auto-

mobile in the United States and Canada, as opposed to some 2 per cent in Denmark, Norway, and the United Kingdom. But this one item influences the percentages spent on everything else in Canada and the United States. It is well to recall that consumption consists of allocating a fixed income among alternatives, so that all items in a consumption pattern are substitutes to some degree.

Miss Williams' cautions are less applicable to Robert Ferber's analysis of service expenditures which, although it uses aggregate data, introduces sufficient other variables to disclose that income effects are much less significant than usually described, accounting "for half or more of the *explained* fluctuations in expenditures for only four of the fourteen" service expenditure items analyzed. Ferber notes that most of the important variables "reflect directly the influence of advances in technology." Using cross-sectional consumer surveys, however, Eleanor M. Snyder reports that "long-term changes in food and housing expenditures can be accounted for by variations in income, price, and family size, and that the typical distribution of family expenditures, broadly speaking, is similar over time and space." In part, this article's seeming agreement with Kravis' suggestion that "economic growth, as it affects consumption . . . tends to be a broad-scale advance in quantities consumed throughout all categories of goods" (both authors hypothesize that consumers' tastes are fairly fixed and deviations rare) stems from the use of catch-all categories of expenditures which are highly misleading for those interested in consumption change. The pounds of food consumed per capita in the United States has varied between 1909 and the present by less than 7 per cent; yet of the 79 food *items* currently priced by the BLS index only 27 occurred on the original 1920 list, and most of the additions represent such innovations as biscuit mixes, canned luncheon meat, and frozen foods which were simply not available at the earlier date. Changes in consumption patterns take place *within* the broad categories of expenditure, as shown by other contributors to this volume.

Two papers by Sol Tax and Simon Rottenberg discuss these smaller changes in consumption occurring with growth in underdeveloped economies. Describing Puerto Rico, Rottenberg delineates the consumption patterns which have developed with rising per capita income and economic progress, pointing out that some consumption goods are used as symbols of higher status achieved with greater mobility and social flexibility. Shoes, a status symbol around the turn of the century, have been succeeded by refrigerators and canned imported fruits. (This reviewer would add large American automobiles, in view of the stature of most Puerto Ricans.) Puerto Ricans have other preferences, particularly a "taste" for children and for collective consumption of health and educational facilities, which distinguish this society from a common pattern of economic growth. Tax discusses the lack of a demonstration effect in a growing economy by analyzing Indian Guatemala, where two different cultures exist. After 400 years of contact with European patterns of living, the Indians have "maintained a total pattern distinctively their own" and income increases seem to be spent on more of the same rather than on new items. Hence Tax suggests that economic aid should work within the framework of an existing consumption pattern, to provide developing countries with

the widest possible range of alternatives so that people may "work their own way to their own solutions, as we in our own history did ours."

In commenting on one paper, editor Clark maintains that the role of the salesman in economic development may have been overlooked, and that any substantial increase in the range of alternative consumption choices results from someone's marketing activity. Perhaps the salesman stands in the same relation to the innovating consumer that the inventor does to Schumpeter's entrepreneur. At any rate, the Conference on Consumer Behavior renders special service by including the musings of marketing men on the process of consumer reaction to new products. A. C. Nielson, whose files must teem with data on the process of innovation, discusses the impact of product change on consumers. Nielson's data on 25 new or improved products recently introduced show that "periods up to four years appear to be necessary to be sure of the product's ultimate success or failure" but that profits from innovation frequently appear only after a longer time-period. Despite the fact that this country's basic orientations are favorable toward innovation (a cultural description enlarged upon by S. A. Stouffer in one article and Riesman and Larrabee in another), Nielson reminds us that not all new products which are superior in performance succeed. Industry spokesmen have often mentioned the snowballing effect of consumer acceptance of a new product, so that initial sales, no matter what the advertising campaign, remain low until sufficient time has elapsed for consumers themselves to convince others to buy, or boycott, a new or improved product.

Both these factors, but particularly "innovation-mindedness" on the part of individual consumers, were reported on by Eva Mueller, of the Survey Research Center. The cross-sectional survey technique, together with the straightforward approach of asking people for their plans, their attitudes, and their opinions, produces many tabular classifications, ingeniously interpreted by Miss Mueller. According to her index, "innovation-mindedness," at least with respect to household appliances, occurs among young, well-educated, middle-income families, primarily those with children and a strong interest in the home who have already acquired standard household equipment. These conclusions are not unreasonable, but Miss Mueller's index of innovation-mindedness seems open to criticism. One of the three questions used in the index asks the respondent to define an appliance as "useful" or a "luxury"—loaded words which this reviewer and many others have found misleading in querying people. Another question equates an *interest* in innovation with a *wish* for new features or improvements on present equipment. In many cases, the householder with much *interest* in new features has no *wish* for them because he is perfectly capable of rejecting this purchase in favor of another for which he has a stronger *wish*. The article demonstrates, however, that useful empirical data on consumer innovations can be collected.

Most of the authors submit worth-while suggestions for further research, but in so far as a real attack on the problem of consumer innovation is concerned, it seems clear that we are a long way from any such general theory as Schumpeter's.

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NOTES

John D. Black, of Harvard University, has been appointed chairman of the American Economic Association nominating committee. He would appreciate suggestions for officers for next year at as early a date as possible.

Announcement Regarding Program for Annual Meeting

The 1959 annual meeting of the Association will be held at the Sheraton-Park Hotel, Washington, D.C., December 28-30. To provide the officers of the Association with more adequate information on papers in preparation that might merit a place on the program, Dr. Morris Copeland inaugurated two years ago an open competition. The experiment was repeated by Dr. George W. Stocking and will be continued this year.

The open competition is primarily designed to give younger economists—many of whom are apt to be overlooked by the president and his program advisers—an opportunity to win a place on the program. Those wishing to enter the competition should write Professor James Washington Bell, Secretary, American Economic Association, Evanston, Illinois, indicating in not more than 100 words the nature of the proposed paper and requesting an instruction sheet and entry form. Papers entered in the competition must be in the hands of the committee of judges by September 1, 1959. Each paper will be identified by code number, and judges will make their selection without knowing the names of the authors. The judges will apply to the papers such standards of professional competence as are ordinarily met by program participants.

The authors of the papers selected by the judges will be invited to present them in one or more sessions at the Washington meeting, and the papers will be published in the *Proceedings*.

Arthur F. Burns, *President*

Carnegie Corporation Travel Grants

For administering the grant to the Association by the Carnegie Corporation to make possible attendance of members at scholarly meetings abroad (see the *Review*, Sept. 1957, p. 811), the following procedure has been established:

Travel grants will be for attendance at association-sponsored conferences in which economists of several nations participate. Officers of the sponsoring association and economists invited to present papers will be eligible for these grants, which cover expenses for round-trip (tourist) plane fare from New York or from participant's residence. A participant whose round-trip fare is paid by a sponsoring association or some agency is not eligible for a grant. But where a sponsor provides part travel fare, application may be made to the Association for the balance. If a participant is going to be abroad on other matters he should apply for only round-trip travel expenses from his foreign location to the site of the conference.

Address applications to the President of the American Economic Association. An *ad hoc* committee consisting of the Secretary-Treasurer of the Association and two members appointed by the President will act on applications and make recommendations to the President.

Summer Institutes for Foreign Students

In the summer of 1959 (July 8 to September 5) and in the summer of 1960, the second and third of a series of three training programs are planned for foreign students who are coming to the United States for graduate work in economics and agricultural economics. These programs provide intensive instruction in basic economic analysis and in oral and written English. There is also some introduction to the United States economy and to United States culture. Expenses of students accepted, including additional travel and main-

tenance needed, will be covered if necessary. But the students and their sponsoring institutions will be invited to contribute to the extent they are able. Colleges and universities offering graduate instruction in economics and agricultural economics and other agencies and institutions concerned with foreign students in the United States may recommend candidates. Forms for recommending candidates and for applying for admission are obtainable from the Institute of International Education, 1 East 67th Street, New York 21, New York. These institutes are supported by a grant from the Ford Foundation.

New Publications

The National Institute of Economic and Social Research is now publishing every two months the *National Institute Economic Review*, primarily for those concerned with current economic trends and policy. The *Review* contains reports of the Institute's economists and statisticians engaged in the continuous study of the current economy. Subscription rate: £2, or $6.00. Address: The National Institute Economic Review, 2 Dean Trench Street, Smith Square, London, S.W. 1.

Economy and History, a new journal of economic history, is published by the Institute of Economic History and the Economic History Association, University of Lund, Sweden. The editor is Oscar Bjurling; and the journal is to appear once a year. Subscription rate: Sw. Kr. 10, or $2.00.

The Graduate School of the University of Florida announces the initiation of a scholarly series to be entitled: *University of Florida Monographs: Social Sciences*. Four numbers will be published each year beginning in 1959. Editorial communications should be addressed to L. N. McAlister, 111 Peabody Hall, University of Florida, Gainesville, Florida; business correspondence, to L. F. Haines, Director, University of Florida Press, Gainesville, Florida.

Announcements

The Brookings Institution has undertaken an expanded program of activities including (1) the enlargement of its research on public problems, primarily in the fields of economics, government, and international relations; (2) the creation of a Center for Advanced Study that will conduct conferences, seminars, and study groups on public problems and the social sciences; (3) research fellowships for advanced graduate students completing work for the Ph.D. in leading universities; and (4) visiting professorships for research on public problems.

The Economic & Statistical Society of Trinidad & Tobago was formed in May 1958. Initial meetings and seminars have concentrated on problems directly related to the West Indian economy. Officers are: J. Harewood, president; K. Straw, vice president; Mrs. J. E. Lewis, secretary-treasurer; and F. Dowdy, assistant secretary. Communications should be addressed to Mrs. Lewis, 10 Kitchener St., Woodbrook, Port of Spain, Trinidad, W.I.

Deaths

Ernest Bogart, November 4, 1958.
Major Foster, New York University, July 19, 1958.
Donald A. Garrett, University of Colorado, September 16, 1958.
Charles W. Hammans, Ohio State University, October 15, 1958.
Charles P. Huse, professor emeritus Boston University, July 13, 1958.
Paul E. Malone, University of Kansas, November 29, 1958.

Retirements

Robert A. Brady, University of California, Berkeley.
John B. Condliffe, University of California, Berkeley.
Martin G. Glaeser, University of Wisconsin, June 1959.
Charles K. Knight, Wharton School, University of Pennsylvania.
Albert Meyers, Georgetown University.

Frederick C. Mills, Columbia University, June 1959.
Selig Perlman, University of Wisconsin, June 1959.
Hans Staudinger, New School for Social Research, June 1959.

Visiting Foreign Scholars

Richard Goodwin, Cambridge University, England, visiting professor University of Washington spring quarter.

N. A. Mavlankar, Fergusson College, Poona, India, visiting lecturer in economics University of Colorado spring semester.

Henry Pelling, Queens College, Oxford University, honorary fellow University of Wisconsin second semester and summer 1959.

François Perroux, College de France, lecturer Laval University, University of Montreal and University of Toronto February and March 1959.

J. Denis Sargan, Leeds University, England, visiting professor University of Minnesota current academic year, not University of Michigan as reported September 1958 number this journal.

N. V. Sovani, Institute of Politics and Economics, Poona, India, visiting lecturer and fellow Johns Hopkins University 1959-60.

Ralph Turvey, London School of Economics, visiting research professor of economics University of Chicago current academic year and visiting professor University of Washington summer 1959.

Sheila T. van der Horst, University of Cape Town, Cape Town, South Africa, visiting professor of economics and political science, Duke University second semester 1958-59.

Promotions

Victor Andrews: assistant professor, School of Industrial Management, Massachusetts Institute of Technology.

G. Jay Anyon: associate professor of industry, Wharton School of University of Pennsylvania.

Marto A. Ballesteros: assistant professor of economics at University of Chicago, currently serving as member of staff of the Economics Research Center, Catholic University of Chile.

Raymond R. Beneke: professor in the department of economics and sociology, Iowa State College.

Francis E. Brown, Jr.: assistant professor of statistics, Wharton School of University of Pennsylvania.

Tom E. Davis: associate professor of economics at University of Chicago, currently serving as member of staff of the Economics Research Center, Catholic University of Chile.

John S. deCani: assistant professor of statistics, Wharton School, University of Pennsylvania.

Donald J. Dewey: associate professor of economics, Duke University.

Oscar K. Dizmang: acting head of the department of economics and business administration at Pacific Lutheran College.

David Durand: professor of industrial management, School of Industrial Management, Massachusetts Institute of Technology.

Robert D. Entenberg: professor of retailing in the Graduate School of Retailing, University of Pittsburgh.

Joseph R. Ewers: executive secretary, M.B.A. Program and faculty lecturer in business administration, School of Business, Indiana University.

George Fisk: associate professor of marketing, Wharton School, University of Pennsylvania.

Richard Gill: assistant professor of economics, Harvard University.

Anne E. Hulse: assistant professor of economics, Hunter College.

Robert C. Jones: assistant professor of statistics at the Wharton School, University of Pennsylvania.

Louis Lefeber: assistant professor of economics, Harvard University.

Adolph Matz: professor of accounting, Wharton School, University of Pennsylvania.

Adrian M. McDonough: associate professor of industry, Wharton School, University of Pennsylvania.

John R. Meyer: associate professor of economics, Harvard University.

Ervin Miller: associate professor of finance, Wharton School, University of Pennsylvania.

John E. Moes: assistant professor of economics, University of Virginia.

David C. Motter: assistant professor of economics, Wharton School, University of Pennsylvania.

Francis Murans: assistant professor of economics, Loyola University, Chicago.

Franklin R. Root: associate professor of marketing, Wharton School, University of Pennsylvania.

Stanley S. Schor: associate professor of statistics, Wharton School, University of Pennsylvania.

Richard S. Woods: associate professor of accounting, Wharton School, University of Pennsylvania.

Zenon S. Zannetos: assistant professor, School of Industrial Management, Massachusetts Institute of Technology.

Appointments

Carl Abner, of University of Louisville: research associate of the University of Kentucky Bureau of Business Research.

Ernest C. Arbuckle, formerly executive vice president of Foster & Kleiser Division of W. R. Grace & Co.: dean of the Graduate School of Business, Stanford University, July 1958.

Herbert Baum: district manager for American National Growers Corporation, San Jose, California.

Warren J. Bilkey: associate professor of economics at University of Notre Dame.

Arthur I. Bloomfield: professor of finance and economics, Wharton School of University of Pennsylvania.

Joseph Bonin, formerly of Louisiana State University: assistant professor of economics, College of Business Administration, University of Arkansas.

Mary Jean Bowman: research associate in economics, University of Chicago.

Dorothy Brady: research professor of economics, Wharton School of University of Pennsylvania.

James O. Bray, of University of Chicago: senior economist, Economics Research Center, Catholic University of Chile, succeeding Simon Rottenberg.

M. G. Bridenstine: associate dean of the College of Business Administration, University of Arkansas.

Arthur F. Burns: research professorship endowed by Ford Foundation at Columbia University 1959-60.

Robert Clewett: lecturer in marketing, Wharton School of University of Pennsylvania.

Dale L. Cramer: acting associate professor of economics, School of Commerce, University of Alabama.

William R. Davidson, of Ohio State University: visiting professor of marketing, Graduate School of Business, Stanford University.

Robert T. Davis, of Harvard Graduate School of Business Administration: associate professor of marketing, Graduate School of Business, Stanford University.

Margaret G. deVries, formerly of International Monetary Fund: research consultant in international finance at George Washington University.

Russell A. Dixon: assistant dean, School of Liberal Arts, University of Pittsburgh.

Edwin H. Draine: instructor in economics, Loyola University, Chicago.

Frank H. Eby, Jr.: instructor in marketing, Wharton School of University of Pennsylvania.

Alexander Eckstein, formerly of Harvard University: professor of economics, University of Rochester.

Sidney Feldman: assistant professor, School of Business, University of Kansas.

Frederic N. Firestone: instructor in economics at Wellesley College.

Alex Firfer, formerly economic consultant to Puerto Rico Industrial Development Co.: U.N. Technical Assistance Administration industrial development advisor to Corporación Venezolana de Fomento, Caracas, Venezuela.

Margery S. Foster, formerly of Radcliffe College: assistant to president and lecturer in department of economics, Mount Holyoke College.

Robert Foster, of University of Louisville: research associate of the University of Kentucky Bureau of Business Research.

Charles B. Franklin: instructor in economics at Florida State University.

Marshall Goldman: instructor in economics at Wellesley College.

Sidney Goldstein: chief, Economic Impact Research Branch, U. S. Bureau of Public Roads.

Ida Greaves: lecturer in economics, Wharton School of University of Pennsylvania.

Wade F. Gregory: research associate in economics at University of Chicago to serve at the Economic Research Center of the Catholic University of Chile.

William C. Grigsby: assistant professor of finance, Wharton School, University of Pennsylvania.

James B. Hammond: instructor in insurance, Wharton School of University of Pennsylvania.

Bruno J. Hartung, formerly of the College of Steubenville: associate professor of economics at Wheeling College, Wheeling, West Virginia.

Edward Herman: lecturer in finance, Wharton School, University of Pennsylvania.

Daniel Holland: associate professor of finance, School of Industrial Management, Massachusetts Institute of Technology.

T. E. Hollander, formerly of University of Pittsburgh: faculty of Duquesne University, Pittsburgh.

James E. Howell, formerly with the Ford Foundation Program in Economic Development and Administration: assistant professor of economics, Graduate School of Business, Stanford University.

Harry G. Johnson, of Manchester University, England: professor of economics, University of Chicago, effective autumn quarter 1959.

Howard W. Johnson: associate dean, School of Industrial Management, Massachusetts Institute of Technology.

Michael L. Kearney: instructor in insurance, Wharton School, University of Pennsylvania.

William H. Keown: David Ross Boyd Professor, College of Business Administration, University of Oklahoma.

Lawrence Klein: professor of economics, Wharton School, University of Pennsylvania.

Irving B. Kravis: associate dean, Wharton School, University of Pennsylvania.

Howard T. Lewis, Jr., formerly of Cornell University: associate professor of business management and coordinator of Executive Development Programs for University of Oklahoma's Extension Division.

Robert Lewis: assistant professor, School of Business, University of Kansas.

Bernard S. Logan: assistant dean, School of General Studies, University of Pittsburgh.

William G. Madow: Stanford Graduate School of Business, in the winter quarter, to teach statistics.

Maurice Mann, formerly of Ohio Wesleyan University: economist with Bureau of Old-Age and Survivors Insurance, Social Security Administration.

Charles B. McCaffrey: lecturer in insurance, Wharton School, University of Pennsylvania.

Donald Meyer, of Northwestern University: instructor in economics at Oberlin College, second semester 1958-59.

Frederic Meyers: professor of personnel management and industrial relations, Graduate School of Business Administration, University of California, Los Angeles.

Raymond F. Mikesell: acting director of Institute of International Studies and Overseas Administration, University of Oregon.

Charles G. Mogged: district extension economist for southeast Iowa with rank of associate in the department of economics, Iowa State College.

David D. Monieson: associate professor of marketing, Wharton School, University of Pennsylvania.

Sarah S. Montgomery: instructor in economics, Mount Holyoke College.

Ahmad M. Moufti: instructor in economics, Wharton School, University of Pennsylvania.

Richard A. Musgrave: professor of political economy, Johns Hopkins University, effective July 1959.

James B. Nilsen: instructor, University of Minnesota.

Donald W. O'Connell, of Graduate School of Business, Columbia University: assignment in economic research with the Ford Foundation.

Paul W. Paustian: acting head Bureau of Business Research and department of economics, School of Commerce, University of Alabama.

Selig Perlman, of University of Wisconsin: Kulp visiting professor, Wharton School, University of Pennsylvania, current academic year.

Robert H. Raymond: instructor in business organization and management, College of Business Administration, University of Nebraska.

Edward Reighard: visiting associate professor, University of Minnesota.

Edward F. Renshaw: instructor in economics, University of Chicago, currently on leave for military service.

Francis J. Riepl: instructor in statistics, Wharton School, University of Pennsylvania.

Ralph Russell: former position as economist in the Fish & Wildlife Service, Department of Interior, after 5-year interval spent in New England.

H. Michael Sapir: development economist, U.N. Technical Assistance Administration, with Chile's Development Corporation, after one year with TAA in Brazil.

Thomas C. Schelling: professor of economics, Harvard University.

Ellwood W. Senderling: lecturer in industry, Wharton School, University of Pennsylvania.

Milton M. Shapiro: assistant professor of economics, Occidental College, spring semester.

Norman J. Simler: visiting lecturer in economics, University of Minnesota.

Jared Sparks, Jr., formerly of Purdue University: associate professor of economics, College of Business Administration, University of Arkansas.

Ben S. Stevenson: instructor in finance, School of Business, Northwestern University.

Jacob I. Weissman: associate professor of law, School of Business, University of Chicago.

Henry F. Williams, formerly of the University of Illinois: assistant professor of economics, Franklin College, Franklin, Indiana.

Willis J. Winn: dean of the Wharton School and vice-provost, University of Pennsylvania.

Alexander Woroniak: faculty of Graduate School of Social Science, The Catholic University of America.

Dale Yoder, formerly director Industrial Relations Center, University of Minnesota: professor of industrial relations, Graduate School of Business, Stanford University.

Leaves for Special Appointments and Assignments

Laurence de Rycke, of Occidental College: U.S. State Department representative in a 6-week series of symposiums in Bombay and Madras, India.

David E. Faville, of Graduate School of Business, Stanford University: faculty of IMEDE, Management Development Institute, Lausanne, Switzerland, current academic year.

John Fei, of Antioch College: visiting associate professor, University of Washington, winter quarter 1959.

Arnold C. Harberger, University of Chicago: staff member Economics Research Center of Catholic University of Chile, fall quarter 1958.

R. Murray Havens, School of Commerce, University of Alabama: lecturer University College, Dublin, Ireland, spring term.

Everett D. Hawkins, Mount Holyoke College: economics staff at Gadjah Mada University, Jogjakarta, Indonesia.

Reuben A. Kessel, University of Chicago: staff member Economics Research Center of Catholic University of Chile, summer 1958.

Solomon Levine, Institute of Labor and Industrial Relations, University of Illinois: Fulbright lecturer Keio University, Tokyo, Japan, current semester.

E. Scott Maynes, of the University of Minnesota: consultant to National Council of Applied Economic Research, New Delhi, India, fall and winter quarters 1958-59.

Winston Oberg, Michigan State University: lecturer in economics department, The University, Leeds, England, January to June 1959.

Richard Phillips, Iowa State College: land grant college consultant with the American Institute of Cooperation from January to July 1959.

Frank S. Pinet, of the University of Kansas: visiting professor of business administration, I.S.I.D.A., Palermo, Italy, January to July 1959.

James A. Storer, of Bowdoin College: lecturer Institute of Economic Research and Development, University of the Philippines, 1959-60.

Resignations

James M. Alexander: Wharton School, University of Pennsylvania.

James S. McAllister: Wharton School, University of Pennsylvania.

Robert H. Parks: Wharton School, University of Pennsylvania.

J. Hart Walters: Wharton School, University of Pennsylvania.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the Review will publish in this section brief description of vacancies announced and of applications submitted (with necessary editorial changes). Since the Association has no other way of knowing whether or not this section is performing a real service, the Secretary would appreciate receiving notification of appointments made as a result of these announcements. It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Business law and accounting: School of business administration in the nation's capital has opening for instructor or assistant professor, LL.B. and accounting B.S. required minimum. For 1959-60 academic year. P207

Undergraduate economics: Needed January, 1959. Instructor or assistant professor for fully accredited northern university, enrollment over 6,000. General sophomore economics and perhaps one or two advanced courses; 15 hour load; some evening school. Salary $4,500 to $6,500 for 9 months, depending upon education and stage of career. Should be Ph.D. or near, but experience or maturity are not required. Specialization or research not as important as good teaching ability. Permanent vacancy. P208

Economics and business administration: A Christian liberal arts college will have a vacancy September, 1959, for someone to handle courses in economics, business organization and finances, salesmanship, to be followed second semester by economics, marketing, and business management. Desire Ph.D. but master's degree with teaching experience will be considered. Salary and rank are open, depending upon training and experience. Write Chairman, Department of Economics and Business Administration, Geneva College, Beaver Falls, Pennsylvania.

Business administration: Professor or associate professor of finance, with major interest in investments. Doctoral degree required, plus experience in teaching. Experience in business administration or research desirable. Probable starting date September, 1959. P211

Accounting: Ph.D. or D.B.A. completed or nearing completion; or M.B.A. and C.P.A. Teaching and business experience desirable. Applicant must be qualified to teach advanced accounting courses. Position in a California state college. Opportunity exists for consulting work in the community. P212

Finance, credit and collection, and management: Ph.D. or D.B.A. completed or nearing completion; teaching and business experience in investments and credit desirable. Opportunity exists for consulting work in the community. Position in a California state college. P213

Economics: Instructor and assistant professor of economics. Instructor to teach three sections of introductory economics and one advanced course; assistant professor two sections of introductory economics and two advanced courses. Salaries dependent on qualifications. Write Chairman, Department of Economics, Douglass College, Rutgers University, New Brunswick, New Jersey.

Marketing, finance, and management: Unusual opportunities for competent teachers able to work with business groups. Two openings, from assistant to full professor. School of business administration in Washington, D.C. P214

Economic principles, labor economics, economic history, consumer economics, social control of business: Instructor or assistant professor, $4,000-$6,500; small eastern liberal arts college. Subjects are economic principles and a combination of two of the following: labor economics, U.S. economic history, consumer economics, social control of business. Ph.D. required for assistant professor level. P215

Accounting, economic statistics: Instructor or assistant professor, $4,000-$6,500; small eastern liberal arts college. To teach introductory accounting and economic statistics and (when necessary) principles of economics. P216

Marketing: Faculty member wanted for fall, 1959, in private metropolitan university in the middle west. Must have Ph.D. in business or economics. Salary and rank depend on previous experience, publication, etc. Full-time salary can be supplemented by summer teaching. Opportunity exists for consulting work in the community. P217

Accounting: Midwestern university in metropolitan area desires to add a faculty member in the fall of 1959. C.P.A. and master's degree or Ph.D. required. Salary can be supplemented by summer teaching and consulting work. P218

Management, marketing, corporation finance: Growing Department of Business Administration has an opening for a Ph.D. or D.B.A., preferably between ages of 25 and 40. Will consider applicants with master's degree who are near to receiving the higher degree. Man chosen will have key position in development of the general business major. Primary consideration is teaching ability. Business administration programs are on co-operative plan. Salary and rank dependent on education and experience; permanent. Begin fall, 1959. Send résumé to R. D. Scott, Head, Business Administration Department, Rochester Institute of Technology, 65 Plymouth Avenue South, Rochester 8, New York.

Mathematics of finance, statistics: Opening in Department of Business Administration for man or woman to teach mathematics of finance to freshmen and statistics to seniors. Major in economics and minor in mathematics and statistics or vice versa. Master's degree acceptable but would prefer person working on Ph.D. Send résumé to R. D. Scott, Head, Business Administration Department, Rochester Institute of Technology, 65 Plymouth Avenue South, Rochester 8, New York.

Economists Available for Positions

Industrial and personnel management, labor economics, money and banking, economic principles, statistics: Man, 44, married; A.B., M.A., requirements for Ph.D. completed except dissertation, which is to be completed by August, 1959. Ten years of successful college and university teaching in above fields; 9 years of personnel experience in industry and government. Especially interested in college or university teaching position. Prefers Midwest location. Available in fall, 1959. E722

Business and economic forecasting, business cycles, international economics, trade, and finance, statistics: Man, 49, married; master's and doctor's degree in economics and statistics from leading university. Serving since 1946 in a well-known university; desires new position as professor, chairman of department, and/or director of research in a colege or university. Twenty years of experience in teaching, research and direction thereof, including 5 years as senior economist in Washington, D.C.; numerous studies and publications. E758

Economic and business research, community and regional economic base analyses, public finance, principles, finance: Man, 34, married; Ph.D. in economics. Teaching, governmental research, and private economic consulting experience; publications; administrative experience. Currently acting head and research director of leading state university government research bureau. Desires directorship of university bureau of business research, West Coast, Midwest, or Eastern location. E765

International economics and international relations, economic policy and government in economics, corporation finance (American and international), public finance, economic history, economic geography, comparative systems, regional economics of Europe, Middle East, Latin America: Man, in fifties; U.S. citizen; European professorial qualification; doctoral degrees in economics, finance, and law. Head of a department, full and visiting professor on four continents, including a leading university; 5 years of teaching at a U.S. university; research director; international banking vice-presidency; statescraft and diplomatic functions on advanced level; at present visiting full professor at a state university; roster U.N. Seven major and many shorter publications. E771

Marketing, statistics, economic analysis, industry and commodity studies: Man, 40, married; Ph.D. credits completed. Over 10 years of top professional experience in supervising and conducting economic and marketing research projects. Desires teaching or business position. E775

Economic development, international economics, economic planning, foreign trade: Man, 47, married; B.A., University of Berlin; M.A., University of Paris. Fifteen years in responsible government positions in international economics; 5 years with private business firms (market research and advertising) in U.S. and Europe. Fluent French, German, and Russian. At present consultant in economic development for private research organizations and Washington economic correspondent for leading foreign newspapers and periodicals. Desires permanent position or consulting assignments in above fields. E776

Economic principles, economic theory, industrial management, production control, personnel management, labor, marketing, accounting, statistics, government and business, business administration: Man, 38, married; Ph.D., postdoctoral study. Four years of college teaching experience; 10 years in business and industry. Interested in college or university teaching or research position. Available in June or September, 1959. E782

Corporate finance, investments, accounting: Man, 32, married; M.B.A., C.P.A., candidate for Ph.D. in economics. Five years of practical experience; 5 years of college teaching experience. Minimum salary $8,000. E783

Economic principles, applied economics, problems of labor and industry, business cycles, regional economics, problems of contemporary society: Man, 33, married; Ph.D., University of Pittsburgh; postdoctoral study. Five years of teaching experience. Desires research position in university, private organization, or public agency. Will consider part-time teaching in connection with research duties and relocate. E784

Economic theory, statistics, money and banking, investments, international economics, economic geography: Man, 29, married; B.S., M.S. Presently teaching but desires new position offering possibility of completing Ph.D. work, possibly at nearby university. Available in September, 1959. E786

Finance and general economics: Man, 44. Presently head of department; seeks department chairmanship or bureau directorship offering greater responsibility and scope than present position. Publications. Available in February or September, 1959. E787

Economic principles, consumer economics, economic thought, cartels, educational economics: Man, 37; M.A. and Ph.D. in economics. Publications on cartels. Available in June, 1959. E789

Marketing, finance, business administration: Man, 37, married; B.S. (Economics), M.A. Ten years of accounting and finance service in government. Desires research position offering challenge in foundation, industry, or as an economic correspondent for periodical. Teaching acceptable. Will travel and relocate. E790

Economic theory, international economics, public finance, mathematical economics, statistics: Man, 31, married; Ph.D., Columbia. Six years of successful teaching; honor society, fellowship; publication. Available in July or September, 1959. E791

Finance: Man, 43, married; A.B., Harvard, M.B.A., New York, Ph.D. expected this year. Eight years in banking, retailing, governmental research, and trade magazine editing, followed by 13 years in college and university teaching of various aspects of economics and business administration, including some administrative experience. Now associate professor. Review contributed in 1958 and book published in 1957; 2 books in preparation. Seeks specialization in finance or chairmanship of department of either business administration or economics and business administration. E794

Economic research and industrial planning: Man, 32; B.S., M.B.A., major New York University, almost completed Ph.D. Extensive experience in economic research and industrial planning; some teaching experience. Especially interested in economic research or teaching college economics, on a full- or part-time basis. Will travel or transfer. E795

Underdeveloped areas, economic theory, international finance, economic history, money and banking: Man, 31; Ph.D., University of Pennsylvania. Ford Foundation Fellow, 1952-55. Three years of subsequent teaching and research experience. Extensive travel, schooling, and field work abroad, particularly in the Middle East and India. Publications; knowledge of three European and four Asian languages. Desires teaching and/or research position. Available in June, 1959. E796

Principles, labor, statistics: Man, 35, married; A.B., M.S., Ph.D. anticipated. Instructor in public speaking, actual and teaching experience; business experience in sales, public relations, and advertising; 1½ years of teaching experience. Nonurban, mid-Atlantic, or mid-South preferred. Available spring quarter. E797

Trade, economic history, history of economic doctrines, theory, statistics: Man, 27; A.B., M.A., Ph.D. expected in June, 1959. Equivalent of 2½ years of teaching experience. Prefers large school in nonurban region. E798

Business finance, investment analysis, securities markets, public finance, economic theory: Man, 34; Ph.D. Eight years of teaching experience in large northeastern University; text in process of publication. Banking experience. Seeks teaching position at associate level. E802

Business organization and management and related fields: Man, 44, married; A.B., Syracuse, M.B.A., Harvard, D.S.S., Syracuse. Nine years of teaching; 1 year of government service; 10½ years in industry. Participated in over 35 executive and supervisory sessions on state and national level; 2 years of college administration and 2 minor publications. Seeks growth opportunity. E803

Economic theory, statistics, international economics, history of economic thought, money and banking, business cycles: Man, 39, married; B.A., M.A. in Economics, requirements for Ph.D. completed except dissertation, which will be completed by the summer of 1959. Research and 6 years of college teaching. Seeks teaching or research position. E804

Economic theory, marketing: Man, 32, married; holds bachelor's, master's, and doctor's degrees with specialization in economic theory and marketing. Four years of part-time business experience while attending universities; 7 years of successful university teaching experience in economics and marketing; 2 years of research experience as manager of local metropolitan research project. Member of A.E.A., A.M.A., and other professional organizations. Excellent references available with respect to administrative, teaching, and research abilities. Desires administrative and/or teaching position. Available in September, 1959. E806

Economic principles, labor economics, labor law, public utilities, economic thought, comparative economic systems, U.S. economic history, price practices and policies: Man, 29, married; B.A., M.A., course requirements for Ph.D. completed. Four years of full-time college teaching; member of a state panel of arbitrators; experience as research assistant, job analyst, supervisor of State Department project; instructor for evening adult school. Desires position at liberal arts college or university. Available in September, 1959. E808

Accounting: Man, 35, married; Ph.D., honors. Thirteen years of university teaching (thesis direction, graduate and undergraduate) and administrative experience (including department head); adult education programming and teaching. Industrial, consulting, and public relations experience; one book and numerous articles published; papers read. Currently teaching in large midwestern university. Interested in administrative position, teaching position, research position, or combination of these. Minimum rank associate professor. Excellent references. Available in September, 1959. E809

Transportation and public utilities, economic development, market research, finance and management: Man, 40; Ph.D. Business experience; 8 years of teaching in a major eastern university and consulting; 6 years as head of economics department of top Latin-American engineering school and consultant to foreign government. Desires position with business firm or research organization; especially interested in overseas assignment which combines administrative functions with economic research. E810

Business cycles, forecasting, international economics: Man, 34; B.S., M.S., Columbia. Seven years of experience in government, national corporation, and management consultant. Desires full- or part-time teaching position in New York. E811

International economics, money and banking, economics of underdeveloped areas, economic principles, statistics: Man, 35, widower; A.B., Swarthmore, M.B.A., New York University. Broad experience as banking economist in Ethiopia, Venezuela, Iran; 4 years with Econometric Institute, New York. Journal and book publications; fluent German, French, Spanish. Desires teaching position permitting work toward Ph.D. E812

Labor, history of economic thought, economic principles: Man, 38, married; Ph.D. Ten years of highly successful university teaching. Publications include those of recent date. Has good position now but desires change. Minimum salary requirement $8,000 for nine months. E813

Money and banking, economic history, economic principles and theory, taxation, public finance, corporate finance, public utility and transportation economics: Man, 40; Ph.D., University of Pittsburgh. Ten years of teaching experience on college-university level. Some government and business experience. Available in June and/or September, 1959. E814

Economics: Man, 30, married; Ph.D. from German university (*summa cum lauda*). Business, research, and teaching experience; publications. Currently associate professor at small liberal arts college. Desires research and/or teaching position. Research fellowship considered. E815

Industrial relations and labor economics, personnel management, industrial management, business economics, economic theory: Man, 32, married; Ph.D. Eight years of teaching and research experience; supervision of graduate study and thesis writing. Several articles in leading journals. Now at large eastern university. Seeks position which offers research opportunity in teaching or industry. Minimum acceptable rank associate professor. E816

Economic theory, public finance, money and banking, government-business relations: Man, 44, married; requirements completed for Ph.D. from Indiana University except dissertation, which should be completed by September, 1959. Prefers teaching but not averse to business or government. Five years in land department of major oil company; 8 years as publisher of small newspapers; 2 years of university teaching; 4 years in Army. Prefers southwest but would consider any area. E817

Money and banking, public finance, fiscal policy, international trade and economics, economic development of underdeveloped areas, especially India: Man, 36, married; B.A., M.A., Ph.D., Haverford College, University of Pennsylvania, and New York University. Several years of experience in teaching, research, and business; author. Desires permanent position in above fields. E818

International economics, international agricultural economics, international postwar economic institutions: Man, 25, married; license ès sciences économiques, University of Geneva; will have degree of Docteur ès sciences économiques, University of Geneva, in June-July, 1959. Bilingual French-English; speaks Spanish and Italian fluently. Desires teaching position or postdoctoral fellowship in U.S. university for fall of 1959, preferably East Coast. E819

Statistics and econometrics, labor economics, economic geography: Woman, 32; graduating M.A., Canadian education. Business experience as research assistant and economics librarian. Excellent writing ability; high academic record. Desires position as assistant in research economics and statistics, with opportunity for individualistic and challenging work. E820

Economic theory, role of information theory, set theory, and operations research in economics of the firm, international economics, ethical and religious values in the economic system, comparative economic systems, business cycles: Man, 36, married; M.S., Columbia University; Ph.D., University of Geneva; Ford Foundation Research Fellow in Economics, University of Michigan (1958). Book, scholarly articles; many professional honors. Five years of university teaching; extensive business experience; CBS correspondent in Europe, 1947-48; director of American cultural institute in Germany, 1951-55. Seeks permanent affiliation with university, with opportunity for research. Finest references. Available in September, 1960, E821

General economics, statistical methods, social accounting, population, social security and standards of living: Economist granted an early retirement from his position as economist and statistician of the American Medical Association; desires to return to teaching and research work next fall; was member of the economics staff at the University of Illinois for 25 years prior to 1946. Frank G. Dickinson, 2014 McDaniel, Evanston, Illinois.

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THE AMERICAN ECONOMIC REVIEW

OL. XLIX MAY, 1959 NUMBER 2

PAPERS AND PROCEEDINGS

OF THE

Seventy-first Annual Meeting

OF THE

AMERICAN ECONOMIC ASSOCIATION

Chicago, Illinois, December 27-29, 1958

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and

Gertrude Tait, Executive Assistant

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PROGRAM OF THE SEVENTY-FIRST ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION

Chicago, Illinois, December 27-29, 1958

The central theme about which most of the papers are organized is "The United States Economy in a World of Competitive Coexistence." The development of this theme includes papers analyzing the prospects and problems of the communistic economies, the problems facing underdeveloped countries and the American policy towards them, and the problem of maintaining a strong and stable American economy without sacrificing the free enterprise system.

The President appointed no formal committee but wishes to acknowledge the help of Abram Bergson, Rendigs T. Fels, Richard T. Selden, and George J. Stigler in preparing the program.

Friday, December 26, 1958

6:30 P.M.

Dinner Meeting of the Executive Committee

Saturday, December 27, 1958

9:30 A.M.

Soviet Economic Trends and Prospects
Chairman: ABRAM BERGSON, Harvard University
Papers: FRANCIS SETON, Oxford University; LAZAR VOLIN, U. S. Department of Agriculture; JOSEPH S. BERLINER, Syracuse University
Discussants: RAYMOND P. POWELL, Yale University; ROBERT LORING ALLEN, University of Virginia; CHAUNCEY HARRIS, University of Chicago

The Fundamentals of Economic Progress in Underdeveloped Countries
Chairman: THEODORE W. SCHULTZ, University of Chicago
Papers: ARNOLD C. HARBERGER, University of Chicago; RICHARD B. GOODE, International Monetary Fund; WILLIAM H. NICHOLLS, Vanderbilt University
Discussants: BENJAMIN HIGGINS, Massachusetts Institute of Technology; ALEXANDRE KAFKA, United Nations; GEORGE E. BRITNELL, University of Saskatchewan

2:30 P.M.

Soviet Economic Planning
Chairman: EVSEY D. DOMAR, Massachusetts Institute of Technology
Papers: GREGORY GROSSMAN, University of California; OLEG HOEFFDING, RAND Corporation
Discussants: ROBERT CAMPBELL, University of Southern California; DAVID GRANICK, Carnegie Institute of Technology

The Role and Character of Foreign Aid
Chairman: WILLARD L. THORP, Amherst College
Papers: C. TYLER WOOD, International Cooperation Administration; HARLAN CLEVELAND, Maxwell Graduate School of Citizenship and Public Affairs; JOHN H. DAVIS, Harvard University
Discussants: BORIS C. SWERLING, Food Research Institute; SAMUEL P. HAYES, JR., Foundation for Research on Human Behavior; RICHARD S. ECKAUS, Massachusetts Institute of Technology

Round Table on the Organization and Financing of Economic Research
Chairman: SEYMOUR E. HARRIS, Harvard University
Panellists: ROBERT D. CALKINS, Brookings Institution; THOMAS H. CARROLL, Ford Foundation; PHILIP H. COOMBS, Fund for Advancement of Education; SOLOMON FABRICANT, National Bureau of Economic Research; TJALLING KOOPMANS,[1] Yale University; LLOYD G. REYNOLDS, Yale University
Discussion from the floor

8:00 P.M.

The Non-Russian Communist Economies
Chairman: MAX F. MILLIKAN, Massachusetts Institute of Technology
Papers: TA-CHUNG LIU, Cornell University; ALEXANDER ERLICH, Columbia University; EDWARD AMES, Purdue University
Discussants: NICOLAS SPULBER, Indiana University; WILLIAM W. HOLLISTER, Washington, D.C.; THAD P. ALTON, Columbia University

Maintaining Full Employment and Economic Stability
Chairman: ROBERT AARON GORDON, University of California
Papers: GEOFFREY H. MOORE, National Bureau of Economic Research; JOHN P. LEWIS, Indiana University
Discussants: MARTIN R. GAINSBRUGH, National Industrial Conference Board; J. HOWARD CRAVEN, Bank of America, San Francisco; FRANK E. NORTON, University of California at Los Angeles

The Economics of Government Expenditures
Chairman: CHARLES J. HITCH, RAND Corporation
Papers: O. H. BROWNLEE, University of Minnesota; FRED S. HOFFMAN, RAND Corporation
Discussants: KLAUS E. KNORR, Princeton University; JACK HIRSHLEIFER, University of Chicago; ROBERT DORFMAN, Harvard University

Sunday, December 28, 1958

9:00 A.M.

Studies in the Classical Economics
Chairman: JOHN PERRY MILLER, Yale University
Papers: DONALD F. GORDON, University of Washington; JOHN M. LETICHE, University of California
Discussants: ROBERT E. BALDWIN, University of California at Los Angeles; WILLIAM J. FELLNER, Yale University; FRIEDRICH A. HAYEK,[1] University of Chicago

Power Blocs and the Operation of Economic Forces
Chairman: GEORGE J. STIGLER, University of Chicago
Papers: BEN W. LEWIS, Oberlin College; GEORGE H. HILDEBRAND, University of California at Los Angeles
Discussants: CALVIN B. HOOVER, Duke University; EDWARD H. CHAMBERLIN, Harvard University

Special Problems Facing Underdeveloped Countries
Chairman: KENT T. HEALY, Yale University
Papers: WILFRED OWEN, Brookings Institution; WALTER ELKAN, East African Institute of Social Research, Makerere College
Discussants: PHILIP LOCKLIN, University of Illinois; MELVILLE J. HERSKOVITS, Northwestern University

12:00 M.

Joint Luncheon with American Statistical Association and American Finance Association[2]
Chairman: MARTIN R. GAINSBRUGH, National Industrial Conference Board
Speakers: GABRIEL S. HAUGE, Manufacturers Trust Company; EZRA SOLOMON, University of Chicago

2:30 P.M.

Administered Prices Reconsidered
Chairman: FRITZ MACHLUP, Johns Hopkins University
Papers: GARDNER ACKLEY, University of Michigan; JOHN M. BLAIR, Subcommittee on Antitrust and Monopoly, Committee on the Judiciary
Discussants: GARDINER C. MEANS, Washington, D.C.; RICHARD T. SELDEN, Vanderbilt University; WROE ALDERSON, Alderson Associates, Inc.; MARTIN J. BAILEY, University of Chicago

International Trade and Payments in an Era of Coexistence
Chairman: GARDNER PATTERSON, Princeton University
Papers: RAÚL PREBISCH, United Nations, Economic Commission for Latin America; RANDALL HINSHAW, Oberlin College
Discussants: HENRY G. AUBREY, National Planning Association; EUGENE R. SCHLESINGER, New York University

Regional Economies and Industrial Location (Joint session with the Regional Science Association)[3]
Chairman: SEYMOUR E. HARRIS, Harvard University
Papers: VICTOR FUCHS, Columbia University; WALTER ISARD and EUGENE SCHOOLER, University of Pennsylvania
Discussants: WILBUR R. THOMPSON, Wayne University; PAUL G. CRAIG, Ohio State University; RICHARD NETZER, Federal Reserve Bank of Chicago

[1] No manuscript received.
[2] To be published by the American Finance Association.
[3] To be published by the Regional Science Association.

8:00 P.M.

Presidential Address[4]
Chairman: I. LEO SHARFMAN, University of Michigan
Address: GEORGE W. STOCKING, Vanderbilt University

Monday, December 29, 1958

9:00 A.M.

Balanced Economic Growth in History: A Critique (Joint session with the Economic History Association)
Chairman: CARTER GOODRICH, Columbia University
Papers: JONATHAN R. T. HUGHES, Purdue University; GORAN OHLIN, Stanford University
Discussants: RUDOLPH C. BLITZ, Vanderbilt University; THEODORE MORGAN, University of Wisconsin

Current Critical Issues in Wage Theory and Practice (Joint session with the Industrial Relations Research Association)[5]
Chairman: JOSEPH SHISTER, University of Buffalo
Papers: GEORGE H. HILDEBRAND, University of California at Los Angeles; WALTER A. MORTON, University of Wisconsin; HARRY M. DOUTY, U. S. Bureau of Labor Statistics
Discussants: MILTON FRIEDMAN, University of Chicago; DAVID MCCORD WRIGHT, McGill University; MARK W. LEISERSON, Yale University

The Significance of Industrial Organization and Market Structure to Development and Marketing Problems (Joint session with the American Farm Economic Association)[6]
Chairman: ROBERT L. CLODIUS, University of Wisconsin
Papers: JESSE W. MARKHAM, Princeton University; WILLARD W. COCHRANE, University of Minnesota; WILLARD F. MUELLER, University of Wisconsin
Discussants: WALTER ADAMS, Michigan State University; NORMAN R. COLLINS, University of California; HARRY C. TRELOGAN, U. S. Department of Agriculture

Round Table on the Market for Economists
Chairman: JAMES WASHINGTON BELL, Northwestern University
Panel Discussion: Of demand and supply aspects of economist manpower problems by invited participants, with discussion from the floor

Open Competition
Chairman: WILLIAM J. FELLNER, Yale University
Papers: LEO COHEN, Kansas State College; LAWRENCE B. KRAUSE, Cowles Foundation, Yale University
Discussants: JOSEPH A. PECHMAN, Committee for Economic Development; WARREN S. HUNSBERGER, University of Rochester

2:30 P.M.

Selected Problems in Economic Theory (Joint session with the Econometric Society)
Chairman: EDWIN KUH, Massachusetts Institute of Technology
Papers: ALBERT K. ANDO, Massachusetts Institute of Technology, and FRANCO MODIGLIANI, Carnegie Institute of Technology; MILTON FRIEDMAN, University of Chicago
Discussants: EDWARD S. SHAW,[1] Stanford University; JAMES S. DUESENBERRY, Harvard University

2:45 P.M.

Current Trends in Public Policy toward Business (Joint session with the American Marketing Association)[7]
Chairmen: CORWIN D. EDWARDS, University of Chicago, and CHARLES N. DAVISSON, University of Michigan
Papers: PAUL W. COOK, JR., Harvard University; MARK MASSEL, Brookings Institution; H. F. TAGGART, University of Michigan
Discussants: HOWARD WESTING, University of Wisconsin; JOHN S. MCGEE, University of Chicago; JOHN T. WHEELER, University of California

5:00 P.M.

Business Meeting

6:00 P.M.

Dinner Meeting of the Executive Committee

[4] Published in the March, 1959, issue of the *American Economic Review*.
[5] To be published by the Industrial Relations Research Association.
[6] To be published by the American Farm Economic Association.
[7] To be published by the American Marketing Association.

THE purpose of the American Economic Association, according to its charter, is the encouragement of economic research, the issue of publications on economic subjects, and the encouragement of perfect freedom of economic discussion. The Association as such takes no partisan attitude, nor does it commit its members to any position on practical economic questions. It is the organ of no party, sect, or institution. Persons of all shades of economic opinion are found among its members, and widely different issues are given a hearing in its annual meetings and through its publications. The Association, therefore, assumes no responsibility for the opinions expressed by those who participate in its meetings. Needless to say, the papers presented are the personal opinions of the authors and do not commit the organizations or institutions with which they are associated.

JAMES WASHINGTON BELL
Secretary

SOVIET ECONOMIC TRENDS AND PROSPECTS

PRODUCTION FUNCTIONS IN SOVIET INDUSTRY

By Francis Seton
Nuffield College, Oxford University

In recent years much energy has gone on attempts to gauge the volume and growth of the Soviets' industrial effort. It is of course essential to reach some verdict on these points, but most economists will hardly feel true to their calling until they advance from the mere measurement of phenomena to an analysis of underlying conditions and causes. This paper is an attempt to see how far the quantitative material which the Soviets have so far made available may be expected to take us in this direction. It can hardly be more than a tentative foray, as the research is limited to individual effort, the data refractory and subject to obsolescence in the wake of new disclosure, and the method—for all its universal application—as yet imperfectly understood. However, the material is there, and asking to be put to work as best we know.

I. *Identifying the Growth Factors*

Ideally one would like to assess the part played by the traditional factors of production (land, labor, and capital) and to isolate the effects of the more crucial intangibles, such as entrepreneurship, incentives, discipline (whether voluntary or enforced), education, technical know-how, and the like. In practice, however, only labor and capital yield to direct measurement (however imperfect), and the rest must at the present level of our skills be left to merge into ill-defined conglomerates, at best identifiable as residuals of one kind or another.

Industrial output (P) may be linked to the measurable factors (labor L and capital C) by means of a production function $P = f(L,C)$ which, as a first approximation, we shall require to assume the well-known Cobb-Douglas form in one of two possible versions. The usual "static" version may be formulated as:

$$P = mL^aC^b, \quad (1)$$

where a and b stand for the elasticities of output with respect to labor and capital and m is a multiplicative constant. In contrast with the original Cobb-Douglas variant, we do not postulate that the exponents add up to unity, but admit either $a + b > 1$, $= 1$, or < 1, according as returns to scale are increasing, constant, or diminishing. This allows for varying successes with the factors unspecified in the equation, as well as

for such opportunities of improved co-operation among all factors as may emerge with variations in the level of productive activity.

As an alternative to (1) we shall use the "dynamic version"

$$P = \mu L^{\alpha} C^{\beta} e^{\gamma t}, \quad (2)$$

where α, β, and μ retain the meanings of a, b, and m (elasticities and constant), e is the basis of Napierian logarithms and γ aims to measure the rate of technical progress per unit time (t). In contrast with the static version, we are here attempting to separate the effects of letting inputs expand while time stands still (α and β) from those of letting time advance while inputs stay unchanged (γ). It is the latter which we would like to identify with developments in the "state of the arts," whether technological, administrative, or in the general level of human skills—"technical progress" for short. This may expose us to certain conceptual errors[1] which cannot be fully investigated here, but will, we hope, be kept within reasonable bounds by invoking both static and dynamic versions of the production function as mutual correctives whenever possible.

II. *Measuring the Impact of Growth Factors*

The parameters of (1) and (2) can be estimated by the method of partial regression analysis, where either the absolute levels or the growth rates of the variables (P, L, and C) may be correlated.

Traditionally the static equation (1) has been fitted to ordinary time series; i.e., to a statistical population of consecutive years. This was the way in which Professor Douglas established his famous formula $P = 1.01\, L^{.75}\, C^{.25}$ for United States manufacturing (1899-1922), and in which a host of others for various countries have since been found. In what follows we shall refer to it as the "time-level" method.

As an alternative, it may be possible to take the variables from a population of industry branches during a single year—a device we shall refer to as the "branch-level" method. This also has yielded many empirical functions of interest, particularly for the United States and Canada.

Lastly, it may be possible to employ an "area-level" method in which the statistical population consists of territorial subdivisions within the industry of a given country in a single year.

All these "level" methods make use of linear fits to logarithms ($\log P = a \log L + b \log C + \log m$) and are dependent on statistics concerning the absolute level of the variables. In practice, however, these are frequently lacking or unsuitable[2] and we are thrown back on the growth rates of the variables in a number of isolated years or between two terminal dates. In such cases one of two things may be done:

[1] This and all other footnotes appear at the end of this paper.

We can derive a dynamic function (2) from the best linear fit to the known growth rates (converted to a yearly average basis); for it follows from (2) (by taking derivatives with respect to time and dividing by P) that

$$(3) \qquad p = \alpha l + \beta c + \gamma$$

where p, l and c stand for $\frac{1}{P}\frac{dP}{dt}, \frac{1}{L}\frac{dL}{dt}$ and $\frac{1}{C}\frac{dC}{dt}$ (i.e., the growth rates per unit time). Here again we can base our analysis on the three alternative types of statistical population: a sequence of years (the time-growth method), a set of industries (the branch-growth method), or a number of territorial units (the area-growth method).

Alternatively, we can derive a function of the type (1) by taking the best linear fit to the growth rates through the origin: for it follows from (1) (by the previous procedure) that

$$(4) \qquad p = al + bk$$

The result is a function which imputes all output growth to increases in the factor-inputs, discounting the possibility that some of it may be due to improved factor utilization or technical progress in general. We shall term this the "trend-allocating" version of the growth methods, as opposed to the "trend-segregating" version (3); it may be regarded as arising from the latter through an "allocation" of the trend effects among the inputs in some optimal way.[3]

Apart from the level and growth methods, analysts have often resorted to the correlation of deviations from trend (or trend ratios). This, however, makes the result so heavily dependent on short-term fluctuations in time series that it could hardly be applied to Soviet variables (or our estimates of them) without swamping the deviates in the errors of bias or estimation.

Each of the methods reviewed has its own merits and difficulties, and the problem of choosing between them, where such choice is possible, might often bring us to the verge of metaphysics. In the Soviet field, however, the choice is in any case restricted by the available statistics, which would make it idle to seek to tie up the loose ends of theory in the present context. We shall not, therefore, try to go beyond the simplest application of the methods indicated, seeking what safeguards we can in minor adaptations dictated by the material and in such elements of mutual check as the use of alternative approaches to the same body of data may provide.

III. *The Soviet Material*

The period covered starts with full-scale central planning in 1928 and ends in 1955—the year for which the latest full complement of data is

available. It contains large patches of statistical wasteland, notably in the late thirties and throughout the forties, but we now have sufficiently useful information on the period 1950-55 and almost an *embarras de richesses* on the early industrialization drive 1928-34. Accordingly, our interest will mainly center on these two periods and, by extension, on comparisons of prewar and postwar conditions in general, insofar as they are not overshadowed by preparation for war and its aftermath.

Industrial output is very fully documented throughout the period under review by the official figures covering total and large-scale industry (based on the famous "1926-27 prices" up to 1950 and on 1952 prices thereafter until 1955). The weaknesses of these data are too well known to bear repeating here. My own estimates lead me to suppose, however, that during the early period (1928-34) the Soviet all-industry index does not suffer from systematic upward bias.[4] It therefore seemed worth while, at least as one of the possible alternatives (version A), to accept the growth rates for various branches of large-scale industry as given in official sources, on the assumption that they are similarly untainted. The other alternative (version B) replaces these by Hodgman's revised indexes[5] which seek to remove (among other things) any bias due to "gross-value" weighting.[6] The results of both versions are given side by side in Tables 2 and 3, and it will be seen that most of our final conclusions remain valid, whichever of the two we choose to adopt. During the subsequent period (1934-40), all the indications are that the official index can no longer be trusted, and the series of version A (Table 3) has therefore been deflated in accordance with my own estimates,[7] while the alternative version B continues the use of Hodgman's index up to the end of the prewar period.

Soviet manpower statistics are scantier than we should like, but at least they are free from index-number problems. Certain anomalies in their coverage, pointed out by Hodgman and Bergson, are unlikely to affect our results, so long as we are consistent in our choice of sources. The nature of our methods will confine us to data on the manual labor force (in Russian "workers," excluding clerical and technical personnel), and appropriate deflations to total manpower figures will therefore have to be made. This, however, presents no special problem and is unlikely to affect the comparability with other countries' production functions to any significant degree.

The statistics on the "productive basic funds of industry" (roughly, fixed capital excluding land and consumer amenities) are somewhat more plentiful and cover most years, with an occasional breakdown into branches and areas. Where they are given in terms of "current prices" (i.e., prewar), the basis of valuation is in fact a mixed one, incorporating pre-1923 assets at their replacement values of 1925 and the rest at either

original cost or current replacement value, depending on the industry under review. This is of course far from satisfactory, but during 1928-34 when price inflation had scarcely touched the capital goods industries, we shall hardly go wrong by accepting the official data for individual industry branches with a uniform deflation by 4.2 per cent.[8] In post-war publications, we are also given retrospective figures in terms of "comparable prices" intended to eliminate the inflationary factor. These are valuations in prices of 1913 and in the planned prices of 1933, 1937, 1945, and 1950, applied one after the other during the intervening periods and linked together like a chain index at the year of contingity. Within the periods themselves, the figures were kept up to date without annual revaluations of assets by the simple device of cumulating the yearly investment flows (at fixed prices) after deduction of physical wastage. The comparable-price figures are therefore affected by all the weaknesses of the investment-flow index, and as we suspect these to be rather serious we have preferred to use a Western computation throughout the prewar period.[9] The postwar official data do not, in our view, give grounds to similar doubts and have therefore been accepted without adjustment in our calculations.

All usable Soviet statistics refer to fixed capital only, and any attempt to allow for working capital on the basis of the stray data available could only result in adding further elements of uncertainty. This affects the comparability of our production functions with those of other countries where inventories are usually included in the capital figure.

To keep ourselves from being led too far astray by the imperfections of the capital-stock data, we have, wherever possible, made alternative calculations in which this variable is "impersonated" by electricity consumption in industry—an indicator which, for all its imperfections, can at least be measured in physical terms without reference to prices.

IV. *The Prewar Findings*

A Central Year (1934). Our first estimate is a production function for the year 1934 derived by a modification of the branch-level method. This avoids the correlation of absolute Soviet totals for output, employment, and capital stock in each industry, and uses instead the proportions of these totals accounted for by a territorial subdivision within the country; viz., the Russian Republic (RSFSR). The device is inspired by the hope that whatever distortion (through bias or systematic error) may mar the absolute figures is likely to be minimized, if not eliminated, in the territorial percentages; for there is every reason to think that regional breakdowns within centrally administered industries will in general obey the "law of equal cheating." The results of the correlation are reproduced in Table 1 below.

TABLE 1

EMPIRICAL PRODUCTION FUNCTIONS ($P=mL^aC^b$) DERIVED BY THE "BRANCH-LEVEL" METHOD

	Exponent of L a	Exponent of C b	Benefits from Increasing Returns to Scale $a+b-1$
*USSR 1934**			
Large-scale industry‡	.749	.376	.125
Of which: Producer goods‡	.946	.216	.162
Consumer goods‡	.537	.450	−.023
Canada 1923–37§			
All industry*	.510	.488	−.002
All industry†	.468	.525	−.008
U.S.A.—All industry†			
1904#	.65	.31	−.04
1909**	.74	.32	.06
1914**	.61	.36	−.03
1919††	.76	.25	.01
*Australia—All industry***			
1922–23‡‡	.53	.49	.02
1926–27‡‡	.59	.34	−.07
1934–35§§	.64	.36	.00
1936–37‡‡	.49	.49	−.02
United Kingdom—Manufacturing†			
1924##	.717	.175	−.108
1930##	.753	.133	−.114

* Capital is confined to fixed capital only.
† Capital includes both fixed capital and inventories.
‡ Sixty branches, of which 36 were consumer goods industries. Basic data computed from *Tsunkhu SSSR*, "Sotsiali Sticheskoe Stroitel'stvo SSSR" ("Socialist Construction in the USSR"), 1936, pp. 3 and 72.
§ Average of the four years 1923, 1927, 1935, and 1937; *Journal of the American Statistical Association*, June, 1943.
Journal of Political Economy, February, 1943.
** *Journal of the American Statistical Association*, June, 1943.
†† *American Economic Review*, March, 1941.
‡‡ *Quarterly Journal of Economics*, November, 1941.
§§ *Quarterly Journal of Economics*, May, 1941.
American Economic Review, June, 1950.

The sample of industries at our disposal is of course much smaller than those on which analysts of Western countries were able to draw. It comprises only 60 branches compared with 100-200 in the Australian and Canadian correlations and as many as 556 in the case of the United States in 1919. On the other hand, with a multiple correlation coefficient of .9868, the fit may be described as extremely good.[10]

The most striking feature of the Soviet compared with the Western parameters in the table is the larger benefit from increasing returns which seems to stem entirely from the producer goods industries. If Canadian experience is any guide, the inclusion of inventories in the capital stock would not make any appreciable difference to this. We may also note the relatively high labor exponent, a feature which might receive further emphasis by the inclusion of inventories, though in this

respect 1934 does not appear to have been a typical year of the prewar period.

The First Industrialization Drive (1928-34). The data for the years prior to 1934 do not lend themselves to the methods of Table 1. They do, however, permit the derivation of production functions by the branch-growth method, with the following results:

TABLE 2

PRODUCTION FUNCTIONS FOR SOVIET LARGE-SCALE INDUSTRY DERIVED BY THE "BRANCH-GROWTH" METHOD FOR 1928–34

	Exponent of L α or a	Exponent of C β or b	Increasing Returns $a+b-1$	Rate of Technical Progress γ‡	Coefficient of Multiple Correlation R‡
Trend-segregating functions* ($P=\mu L^{\alpha}C^{\beta}e^{\gamma t}$)					
Version A	.685	.426	+.121	+1.620	.8964
Version B	.408	.439	−.163	−.214	.8129
Trend-allocating functions† ($P=mL^{a}C^{b}$)					
Version A	.675	.494	+.169	--	.8941
Version B	.410	.430	−.160	--	.8127

Version A: Accepting Soviet official data on output growth (35 branches).
Version B: Accepting Hodgman's data on output growth (30 branches), except for pharmaceutics and silk industries where official data were substituted.
Both versions use official data on the growth of the manual labor force and fixed capital (the latter deflated from "current" to "1933-stable" rubles by applying the factor .9582 to each industry).

* Best linear fit to average annual growth rates (computed from *Tsunkhu, SSSR, op cit.*, pp. 3 *et seq.*).'

† Best linear fit through the origin to the above growth rates.

‡ The practical identity of the correlation coefficients in the two types of function (trend-segregating and trend-allocating) suggests a degree of collinearity which impairs the determinacy of the γ-values. They are, however, vindicated as good guesses by the independent method of Table 3 which yields substantially the same annual technical progress during 1928–34.

Here the trend-segregating parameters of version A seem to indicate, besides some benefits from increasing returns, a modicum of technical progress from year to year. In line with the reservations already made, however, we must point out that this rate of progress may be an excessive imputation achieved at the expense of influences properly belonging to labor or capital.

Both versions of the parameters, when compared with the figures of Table 1, suggest that in large-scale industry as a whole the potentialities of capital were being diminished while those of labor increased. During 1928-34, a 10 per cent addition to capital could result *ceterus paribus* in an output increase of 4.3-5 per cent, while in 1934 it would only yield an increase of 3.8 per cent. On the other hand, a 10 per cent addition to the labor force, which would have increased output by 4.1-

6.8 per cent during 1928-34, could achieve as much as a 7.5 per cent increase in 1934.

The parameters of version A are of course dependent on the veracity of Soviet output indexes. When the latter are replaced by Hodgman's revised indexes (version B) the closeness of fit somewhat deteriorates[11] and the parameters are in general reduced. It is interesting to note that while the capital coefficients are only slightly affected, the labor coefficients fall by as much as 40 per cent, turning the modest benefits from increasing returns into corresponding losses of roughly equal size. If we assumed that the truth lay somewhere between the official rates of growth and Hodgman's revisions, the labor and capital coefficients would come out in the neighborhood of .55 and .45, respectively, thus giving additional credence to Berliner's guess of constant returns to scale during the prewar period.[12] Similarly the rate of technical progress would come out lower than in version A, though, I imagine, it would still be positive.

The Prewar Era as a Whole. In the absence of sufficient data for a production function covering the late thirties, we must resort to the mid-period function of Table 1 which will enable us to estimate at least the rate of technical progress during the unexplored patches. Given the growth rates of labor and capital inputs in each year between 1928 and 1940, it is possible to compute what the course of output would have been if the mid-period production function (1934) had been operative throughout the prewar era. If we then attribute the deviations of the actual output (P') from this hypothetical index (H') to changes in the production function, i.e., to technical progress, we can trace the course of the latter from year to year. A similar operation is performed upon the Hodgman version of the growth rates, with the corresponding (trend-allocating) formula of Table 2 serving as the bench mark throughout the period (version B).

The findings for 1928-34 of version A (Table 3) suggest an average technical progress of about 1.5 per cent per annum, which is very close to the conclusion reached independently in Table 2 ($\gamma = 1.62$ per cent), though it is now seen to be compounded of oscillation round a stagnant level up to 1933 and a single leap in the subsequent year.

During the whole twelve-year period an average output growth between 13 and 15 per cent p. a. appears to have been achieved by means of growth rates of 8.7 per cent and 18.1 per cent in labor and capital, respectively, coupled with a rate of technical progress of 1.5 per cent p. a. It is interesting to note that the latter comes out at the same figure in both versions A and B. It would seem to follow that 10-12 per cent of the annual output growth was in any case attributable to technical progress, while the remainder was due to manpower and capital in-

TABLE 3

INDEXES OF PRODUCTION AND GROWTH FACTORS IN SOVIET LARGE-SCALE INDUSTRY (1928–40)

	Manual Labor Force† L	Fixed Capital‡ C	Output (Version A)		Output (Version B)		Technical Progress	
			Actual§ P'	Hyp.** H'	Actual†† P''	Hyp.‡‡ H''	Version A $P' \div H'$	Version B $P'' \div H''$
1928	100	100	100	100	100	100	100	100
1929	112	114	120	115	120	111	105	108
1930	135	145	162	144	139	133	113	105
1931	163	190	190	183	164	161	104	102
1932	188	242	205	223	172	189	92	91
1933	186	302	236	242	192	208	98	92
1934	200	361	298	272	229	231	109	99
1935	218	423	361	308	295	256	117	115
1936	232	491	438	341	344	280	128	123
1937	245	537	463	368	371	298	126	124
1938	246	592	485	382	386	311	127	124
1939	246	660	502	399	410	326	126	126
1940	274	736	536	450	430	357	119	120
Annual increase (%)								
Early*	13.2	24.7	18.7	—	14.8	—	−0.5	−0.1
Middle*	7.6	17.6	23.0	—	17.4	—	+9.6	+7.8
Late*	4.3	10.7	5.1	—	5.0	—	−1.9	−1.1
1928–40	8.7	18.1	15.0	—	12.9	—	+1.5	+1.5

* Labor, Capital, and Version A: 1928–33, 1933–36, and 1936–40.
Version B: 1928–34, 1934–37, and 1937–40.

† Up to 1934 from *Tsunkhu SSSR*, *op. cit.*, p. 3. Thereafter from employment series given by Joseph S. Berliner in *op. cit.*, p. 2, with annual growth rates deflated by the factor .9385 to allow for increasing proportions of non-manual labor (the ratio is the observed one during 1928–34).

‡ Joseph S. Berliner, *op. cit.*, p. 2.

§ F. Seton in *B.O.I.S.*, February, 1958, page 18, all-industry estimate "*B*." To make this conformable with large-scale industry we have inflated each yearly growth rate in the ratio in which the two official growth rates (total and large- scale industry) stand to one another (*ibid.*).

** Obtained by applying to the 1934-based indexes of L and C the static formula for 1934 described in Table 1.

†† Donald R. Hodgman, *op. cit.*, p. 89, with interpolations for 1938 and 1939 (Joseph S. Berliner, *op. cit.*, p. 2).

‡‡ Obtained by applying to the 1934-based indexes of L and C the trend-allocating production function for 1928–34 (Table 2, Version B).

creases in the approximate ratio 1:1 (version A) or 1:2 (version B).[18]

The findings also suggest a convenient periodization of the prewar period: During the first five to six years (up to 1933-34) an initial surge of technical gains was followed by actual regression and a slight recovery in the last year. No doubt the dip in the early thirties was due to the precipitate intake of raw recruits into industry, high labor turnover, and some degree of general disorganization. This period was followed by three to four years of spectacular gains (particularly 1934, 1935, and 1936) in which all the technical progress of the prewar era appears to be concentrated. It was only then, presumably, that the large accessions of labor and capital inherited from previous periods could be truly absorbed and the new techniques mastered. This in turn was followed by three to four years dominated by purges and the conversion of industry to a wartime footing, during which some of the previous gains appear to have been lost.

V. *The Postwar Findings*

Even with the latest, and comparatively generous, spate of Soviet statistics the data usable for our purpose have not become as plentiful as one would wish. In the period 1950-55, which is the most fully

documented, only sixteen industries will lend themselves to the branch-growth method exemplified in Table 2. These yield labor and capital exponents (α and β) of 1.186 and .085, respectively, and an annual rate of technical progress (γ) of 6.751 per cent; but the multiple correlation coefficient (.6405) is too low to place any reliance on the result. We have therefore resorted to the area-growth method which offers somewhat greater scope. The results are given in Table 4 below.

TABLE 4

PRODUCTION FUNCTIONS FOR SOVIET INDUSTRY ($P=\mu L^{\alpha}C^{\beta}e^{\gamma t}$) DERIVED BY THE "AREA-GROWTH" METHOD FOR 1950–55

Subjects of Correlation	Exponent of L α	Exponent of C β*	Increasing Returns $\alpha+\beta-1$	Rate of Technical Progress γ*	Coefficient of Multiple Correlation R*
24 areas†	.657	.178	−.165	7.024	.7354
23 areas‡	.624	.190	−.086	7.260	.7802
22 areas§	.775	.131	−.094	7.340	.8296
21 areas#	.828	.070	−.082	8.040	.8802
20 areas**	.939	.022	−.039	8.196	.9060

* The size of γ is seen to vary strongly with that of β and R, which raises the question of its statistical determinacy. Indeed, a smaller γ coupled with a much larger β might still yield significant correlation coefficients. However, the assumption of a rate of progress as low as was observed in the thirties ($\gamma=1.62$ per cent p.a.) would reduce R to .385 in the 23-area sample, and thereby bring it far below the conventional levels of significance.

† The areas involved are the 15 Union Republics (SSR) and 9 subregions of the Russian Republic (RSFSR).

‡ Omitting Azerbaidzhan.

§ Omitting Azerbaidzhan and Kirghizia.

\# Omitting Azerbaidzhan, Kirghizia, and the Northern Region of the RSFSR.

** Omitting those listed in # and Armenia.

With a statistical population as small as that at our disposal, the results may vary greatly with the inclusion or exclusion of a few freakish areas which may be of little consequence to the country as a whole. We have therefore computed alternative regression equations, omitting successive areas in the order of their departure from the general norm; i.e., choosing them in such a way that the correlation coefficient is given the greatest possible increase with each omission. It will be seen that the exponents of labor and capital show considerable instability under this procedure. Nothing very definite ought therefore to be said about them except, perhaps, that all postwar capital coefficients seem to be significantly below the prewar level, which may be partly a reflection of the diminishing effectiveness of investment in a maturing economy. There is, however, greater stability in the "returns to scale" ($\alpha+\beta-1$) which are negative throughout, and in the "rate of technical progress" (γ) which seems to vary roughly beween 7 and 8 per cent p. a. We might conclude, therefore, that postwar Soviet

industry suffered from diminishing returns to scale which were, however, more than made good by an exceptionally high rate of technical advance.

If we substitute my own estimate of industrial growth for the official output index used here, the parameters (α, β, and γ) are all reduced by roughly 14 per cent. This would underscore the tendency to diminishing returns and bring the rate of technical progress down to the slightly more plausible level of 6-7 per cent p.a. It would follow from this that in spite of yearly increases of 5 per cent in the labor force and well over 10 per cent in fixed capital, these factors accounted for less than half (under 45 per cent) of the yearly output growth, the other 55 per cent or so being due to innovation and general improvements.

In view of the arguments in Sections I and II, however, such statements must be interpreted with the utmost caution. It should also be noted that the trend-allocating versions of the production function (see, e.g., Table 2) are no longer applicable in the postwar period. The attempt to use them results in insignificant correlation coefficients (R), or even in negative coefficients of determination (R^2); in other words, no single, unchanging Cobb-Douglas function is able to account for the particular pattern of the postwar data. We must either allow the function to change rapidly from year to year (technical progress), or settle for some more complicated function showing returns which accelerate faster (with expanding scale) than the Cobb-Douglas function is able to accommodate.

VI. *Comparison and Conclusions*

It may seem rash to embark on a comparison of parameters whose values and substantive meaning are as doubtful as we have indicated. Nevertheless, for all the uncertainty surrounding the individual constants, the discrepancy between the general picture they present in prewar and in postwar years is much too striking to be wholly discounted.

Before commenting on this, however, it seems in order to probe into the one area of doubt which might be thought to present the greatest threat to the comparison; i.e., the official (or revised) data on capital stock which, as we have seen, are subject to a sizable margin of error. To safeguard ourselves against the worst excesses of misinterpretation from this cause, we have recomputed our production function, wherever possible, after replacing the capital variable by an index of electricity consumption in industry. The latter is free from the effects of doubtful pricing methods and obviously quite closely related to the former, though the relationship cannot be simple enough to lead to identical production functions (even if capital were correctly measured). In fact,

the parameters come out rather differently, but the general direction of the changes remains unmistakably the same.

The postwar parameters in Table 5 are based on the official output index which, according to the author's calculation, may contain an upward bias of about 14 per cent. If this were corrected, the transition from prewar increasing returns to postwar diminishing returns would appear more dramatic (the postwar returns falling from −.186 to

TABLE 5

EFFECTS ON PRODUCTION FUNCTIONS FOR SOVIET INDUSTRY OF REPLACING THE CAPITAL VARIABLE (*C*) BY AN INDEX OF INDUSTRIAL CONSUMPTION OF ELECTRICITY (*E*)

Subjects of Correlation	Exponent of L α	Exponent of C or E β	Increasing Returns $\alpha+\beta-1$	Rate of Technical Progress γ	Correlation Coefficient R
$P=\mu L^{\alpha}C^{\beta}e^{\gamma t}$					
1928–34† 35 branches.....	.685	.426	+.111	1.620*	.8964
1950–55‡ 23 areas........	.624	.190	−.186	7.260*	.7802
$P=\mu L^{\alpha}C^{\beta}e^{\gamma t}$					
1928–34§ 26 branches.....	.717	.348	+.066	.751	.8372
1950–55# 12 areas........	.243	.457	−.300	4.960	.9636

* The standard errors of the two γ's being .8943 and .3690, respectively, we can say with 95 per cent probability that "technical progress" was below 3.13 per cent p.a. during 1928–34 and above 6.62 per cent p.a. during 1950–55 (but note the qualification on determinacy in Table 4). In the case of the two functions featuring electricity consumption, the confidence intervals for γ come somewhat nearer to overlapping, but we can still say with 90 per cent probability that γ was below 4.18 per cent in the early period and with 95 per cent probability that it exceeded 4.40 per cent postwar. Hence both tests strongly suggest a speeding up of technical progress between the two periods.

† Table 2, Version A.

‡ Table 4.

§ Output and labor force data as for Table 2, Version A; figures for electricity consumption computed from *Tsunkhu SSSR*, *op. cit.*, pp. 29 and 30. The branches involved are the same as those of Table 2 excluding electric power, crude petroleum, manganese ore, pharmaceuticals, paints, etc., minerals for construction, engineering, and furs, whose electricity consumption is not disclosed.

\# Output and labor force data as for Table 4; figures for electricity consumption from *Ts.S.U.*, *op. cit.* pp. 58, 74 *et seq.* The areas involved are the Union Republics excluding Latvia, Kirghizia, and Armenia. No data on the electricity consumption of subregions within the RSFSR are available so far.

−.200 or from −.300 to −.400), while the increase in the rate of technical progress would be somewhat less pronounced (the postwar γ sinking to 6.244 per cent or 3.266 per cent).

The fact that this alternative approach confirms the general picture emerging from our calculations justifies a degree of confidence in the obvious conclusions which seemed to obtrude themselves throughout this exercise.

Continuing high growth rates in postwar Soviet industry are no longer in the main the effects of labor influx and capital accumulation, nor of the slightly increasing (or at least nondiminishing) returns as-

sociated with these as long as other resources were untapped and close at hand. They seem to be predominantly the reward of rapidly increasing efficiency (technological, administrative, or both) in utilizing these inputs at any given level—a progress whose present tempo still outweighs the retarding effects of diminishing returns (such as may be caused by the gradual depletion of the more readily available resources in a maturing economy). That the latter should by now have set in is hardly surprising. What does appear paradoxical is the relatively low rate of technical progress in prewar days when technology was said to be "borrowable," compared with the strikingly high rate at present, when the Soviets must be drawing level in so many ways with those whose technology they could previously borrow. Those of us who have based their predictions of future decelerations in growth rates on the lessening scope for manpower transfers from agriculture and the decreasing effectiveness of capital investment may see their conclusions upset, at least for a time, by the manifest potentialities for technological and organizational improvements still latent in the Soviet economy. Everything seems to depend now on the ability of the Soviet State to turn itself from a mere taskmaster exacting maximum effort regardless of cost into a streamlining efficiency expert pushing rationalization measures and constant improvements in method. In such a process even the ostensible reduction of planned growth rates may, by reducing irrational pressures, result in higher actual growth rates than could otherwise be achieved.

FOOTNOTES:

[1] Statistically, all we can do is segregate in the shape of γ those influences which might act on inputs and outputs coetaneously (i.e., with the common trend); thus imputing to the initiative of labor and capital only such portions of their own impact (in the shape of α and β) as can be inferred from the pattern of lapses from the trend. To some extent this may mean pouring the baby out with the bath water, for the material may have swamped in the common trend some of the influences which, in a causal sense, could only have originated from the inputs themselves. However that may be, intuition prompts that the parameters of the greatest causal significance must lie somewhere between the static coefficients a and b (which swamp everything in the trend) and their dynamic variants α and β (which are completely purged of trend elements), and presumably much nearer the latter. (I have greatly benefited from discussions with Professor H. Wold on this subject, but any errors of interpretation must be ascribed to me alone.)

[2] A recent attempt to use the time-level method on Soviet data has just come to the author's notice (Joseph S. Berliner, "Capital Formation and Productivity in the USSR," Special Publication Series of the National Academy of Economics and Political Science, No. 14, June, 1958). Professor Berliner, after extracting the maximum of usefulness from partial information yielded by the method, wisely refrains from deriving a fully fledged production function. This self-denying ordinance is forced on him by certain characteristics of the data (collinearity) which would make them compatible with a wide variety of different production functions. The present author experienced similar frustration when attempting the area-level method on Soviet data for 1935 (72 areas, see "SSSR Strana Sotsialisma," *Tsunkhu SSSR*, Moscow, 1936), pp. 172-173.

[3] I am happy, once more, to acknowledge my indebtedness to Professor H. Wold for illuminating discussions on this and related issues.

[4] F. Seton, "The Tempo of Soviet Industrial Expansion," a paper read to the Manchester Statis. Soc. in Jan., 1957, and reprinted in the *Bul. of Oxford Univ. Inst. of Statis.*, Feb., 1958, p. 18.

[5] Donald R. Hodgman, *Soviet Industrial Production 1928-1951* (Cambridge, 1954), p. 237.

[6] To my mind there is some doubt whether they perform this function reliably (see "An Estimate of Soviet Industrial Expansion," *Soviet Studies*, Vol. VII, No. 2, 1955), but as they may be good approaches to the truth on other grounds, their use as an alternative was clearly indicated.

[7] F. Seton, *op. cit.*, p. 18.

[8] This is the shortfall of the official yearly growth rate of capital in "1933-stable" rubles compared with the equivalent figure in terms of "current rubles" during 1928-34.

[9] Joseph S. Berliner, *op. cit.*, p. 2.

[10] The degree of collinearity is uncomfortably, but not, we think, prohibitively high.

[11] This in itself is no reflection on the credibility of Hodgman's revised indexes, since the differentials in the growth rates of capital between various industries might be in need of parallel revisions before a test of this sort could fairly be made.

[12] Joseph S. Berliner, *op. cit.*, p. 4.

[13] Average annual output index:

Version A: $115.0 = (101.5) \times (108.7)^{.740} (118.1)^{.378} = (101.5) \times (106.4) (106.5)$

Version B: $112.9 = (101.5) \times (108.7)^{.410} (118.1)^{.430} = (101.5) \times (103.5) (107.4)$

SOVIET AGRICULTURE UNDER KHRUSHCHEV

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Khrushchev and Stalin

The title of this paper, which was selected by our Chairman, is most felicitous. For agriculture, which has loomed so large on the Soviet economic horizon, has born the imprint of Khrushchev's dynamism longer than any other sector of Soviet national economy. In fact, his intimate association with national agricultural policy antedates his rise to power after Stalin. During the last years of Stalin's rule, Khrushchev was spearheading, at least for a time, a new and highly important phase of agricultural collectivization, a subject to which I shall return. I hesitate to further elaborate on the character of his agricultural leadership in order not to commit what, in some quarters, may be construed as a sin of the cult of personality. It may be instructive, however, to cite an excerpt from his not-so-secret 1956 de-Stalinization speech, in which Khrushchev, by his criticism of Stalin, indirectly reveals his own conception of dynamic and realistic leadership:

> All those who interested themselves even a little in the national situation saw the difficult situation in agriculture, but Stalin never even noted it. Did we tell Stalin about this? Yes, we told him, but he did not support us. Why? Because Stalin never traveled anywhere, did not meet city and collective farm workers; he did not know the actual situation in the provinces. He knew the country and agriculture only from films. And these films had dressed up and beautified the existing situation in agriculture. Many films so pictured collective farm life that the tables were bending from the weight of turkeys and geese. Evidently, Stalin thought that it was actually so. . . . The last time he visited a village was in January, 1928, when he visited Siberia in connection with grain deliveries. How then could he have known the situation in the provinces?

Well, no one can complain that Khrushchev does not travel or does not speak often and at length. But it must be acknowledged that he does provide in his speeches a great deal of interesting material on Soviet agriculture.

The central objective of Khrushchev and of the whole post-Stalin Administration has been from the very outset to increase agricultural production sharply and as rapidly as possible. For it was admitted by Stalin's heirs that agriculture was badly lagging behind industry during the postwar period, especially in the livestock sector.[1] Thus, the long promised improvement in the standard of living was seriously retarded. In his most recent discussion of the subject, Khrushchev admitted, even more frankly than in previous public pronouncements, the unsatisfactory condition of agriculture during the Stalin era, without mentioning the late dictator's name.[2] And, surprisingly for a Soviet leader, he

[1] This and all other footnotes appear at the end of this paper.

disclosed the inferiority of Soviet agriculture and of the standard of living, compared to those of the United States, when he initiated in 1957 the unilateral "race" to catch up with America in per capita production of milk and meat.[3] To be sure, Western scholars and observers long regarded agriculture as the Achilles heel of Soviet economy; though the assertion, it seemed to me, always needed the wise qualification of Peter Wiles "that Achilles could, after all, walk upon his heel."[4]

It is true that expansion of agricultural production was also the aim of the Stalin regime. But for political and psychological reasons, not to mention the growth of population, especially the rapid growth of urban population,[5] it acquired an aspect of greater urgency after Stalin's death. Accordingly, the rather Fabian pace of the Stalin era was changed to a more vigorous policy by the post-Stalin leadership. First, certain changes were made in the institutional structure of Soviet agriculture. Second, greater stress has been laid on economic incentives to the peasants in order to increase the quantity and quality of labor input. Third, the state collection or procuring and pricing system for farm products was simplified. Fourth, capital investment in agriculture and input of fertilizers was increased. Fifth, agricultural research has been unshackled to a considerable extent from the Lysenko fetters, though recent events point to some retrogression.[6] Sixth, certain new specific production programs were embarked on; notably, grain expansion on new lands in the eastern part of the country, involving a considerable increase of acreage, and the corn program geared to the expansion of the animal feed supply and of the livestock industry. At the same time some Stalinist programs were deflated or discontinued. Last but not least is the increasing influence of economists and economic concepts on agricultural policy. Some of the most significant aspects of these measures will be examined in the following pages.

Giantism Persisting

To begin with the institutional structure, it is important to note that the post-Stalin "thaw" did not involve any tampering with the basic structure of agrarian collectivism; and that there was no decollectivization in Russia since Stalin, such as occurred, at least temporarily, in other countries of the Soviet bloc. On the contrary, the wholesale merger drive for super collectives, which was masterminded by Khrushchev, has continued after Stalin.[7]

The slogan, "the bigger the farm the better," and the consequent confusion of the largest with the optimum size, stemming from the well-known Marxist doctrine of the absolute superiority of large-scale production, continues to dominate Soviet policy under Khrushchev as under Stalin.

It is, indeed, true that giantism may have certain advantages in the special context of Soviet rule. Notably, it tends to widen the gulf between the rank-and-file peasant membership and the collective farm management, now largely in the hands of outsiders. This gap tends to enhance the driving power of management over labor. It also facilitates central control of collective farming. I believe, however, that the overall economic effect of the chase after a superlarge farm size, which was criticized in the Soviet Union itself especially in the thirties, is largely negative.

It may be of interest that in the United States, where there has been so much discussion in recent years of the increase in farm size, paralleling the growing farm efficiency, only slightly over 2 per cent of commercial farms (not all census farms) in 1954 had 500 acres or more of cropland harvested; all others had much less. But even a 500-acre farm is still puny compared to the 4,500 acres of the average Soviet collective. The team of U. S. Department of Agriculture economists which visited the Soviet Union last summer found that no specific studies have been made of the relation between the size of the farms and efficiency. However, such studies are planned or are in the making. I suspect that, if and when they are made, the studies may disclose that the old law of diminishing returns is not a mere illusion of bourgeois economics, and that giantism is not synonymous with optimum size.

Even the more intensive agrarian collectivism of superlarge farms lags far behind the slavery of the militaristic communes of mainland China, which seems to be advancing George Orwell's *1984* by a quarter of a century. While the prison-like egalitarianism of the Chinese Communist experiment is contrary to the current ideology and practice of Soviet agrarian collectivism, it would nevertheless be premature to conclude that it may not have repercussions on the agrarian policy of the "big brother" in Moscow, provided, of course, that the Chinese experiment itself does not suffer in the meantime a major setback, signs of which are multiplying at present.

Household Allotment Farming—Future Uncertain

The collectivist Leviathan, however, had not swallowed, as yet, the peasant small household land allotments. At the beginning of 1958 the peasants, moreover, still owned privately a considerable proportion of livestock of all kinds, and even surpassed the communal herds of collectives in the number of cows. The attitude of the government, after Stalin, toward such small private farming has been ambivalent, now relaxing, now tightening up. But on the whole, it was not severely repressive.

Khrushchev, however, stressed, especially in his December 15, 1958, Report, the transitory character of the household allotments, at any

rate as far as livestock is concerned, which is the key element. The liquidation of livestock belonging to peasants in collectives is to be a gradual process, according to him, with no definite time limit placed. However, in the case of workers on state farms, a limit of two or three years was set for the sale of livestock to the farms.

Earlier, even sterner measures were taken against the fairly considerable ownership of livestock by nonfarm population. The underlying reasoning is interesting from an economist's point of view. It was asserted in a decree dealing with this matter that breadstuffs (bread, groats, etc.) intended for human consumption were bought in state retail stores and used as animal feed by urban owners of livestock.[8] The price relationship, it was stated, between breadstuffs in state stores and livestock products on the free market made such an operation profitable. But the diversion of breadstuffs interfered with its orderly retail marketing by the government distribution system and was, therefore, deemed undesirable. The possible alternative solutions of this problem were also clearly outlined in the decree: selling of an increased supply of feedstuffs by the state to the population at more advantageous prices than those of breadstuffs; raising the prices of breadstuffs in state stores to a level at which it would have been unprofitable to use them as feed; and increasing the supplies of meat and dairy products distributed through state stores and at prices lower than those prevailing in the free market. All three alternatives were rejected for various reasons in favor of the fourth; namely, the elimination of private ownership of livestock in the cities. Measures with this end in view were decreed.

State Farms Versus Collectives

Besides continuing the drive to merge the collectives into huge units, the Khrushchev Administration has also been responsible for a remarkable expansion of the state farming sector. State farms differ from collective farms, which represent the pooled holdings of formerly independent peasant farmers, in that they are owned and operated outright by the state, with the aid of hired labor paid regular wages as workers are in any Soviet factory. From around 10 per cent of the total sown acreage in 1952, state farms increased their share to more than 25 per cent in 1957 and their number from 4,742 to 5,905. To a large extent this growth is explained by the expansion of the crop area in the eastern zone, which has long been the classical land of large state farms. In part, however, the new ascendancy of state farms has been brought about by the absorption or conversion of peasant collectives. This is just the opposite of what occurred in the thirties, when land was taken away from state farms and allotted to collectives. This new trend has

manifested itself, not only in the "new lands" regions of the eastern USSR, but also in regions of established farming. Among the latter it has been particularly pronounced in the former war zone, where collective farming disintegrated during the war and remained weak despite postwar rehabilitation. The visiting U.S. agricultural economists were told in the cotton growing irrigated regions that the need of considerable new capital investment by the state has been an important criterion determining conversion of collectives into state farms. What I said about giantism in connection with collective farms applies even more emphatically to the huge state farms, which averaged more than 20,000 acres of sown area in 1957.

The revived dynamism of the state farming sector after a long period of relative stability poses the question whether it does not portend an eventual supplanting of collective farming. The question certainly appears less academic today than it was a few years ago. It must be remembered that, ideologically, state farms have always been considered by the Bolsheviks a superior form of economic organization, or, in the Soviet parlance, a "higher type of socialist property" than a peasant collective. It is true that the continued coexistence of the two sectors has been recently officially reaffirmed on a number of occasions.[9] Any intention of mass conversion of collectives into state farms was disclaimed by Soviet officials in discussions with the U. S. Department of Agriculture economists. Still recent developments appear symptomatic of a shift toward greater reliance on state farms. For instance, the Soviet government recently decided, in order to lower the cost of vegetables and potatoes to the city consumer, to select thirty-five farms near Moscow which would specialize in growing these products cheaply.[10] Should this experiment prove successful, it would operate to the disadvantage of those collectives which derive an important share of their income from selling potatoes and vegetables at high prices on the free market. Moreover, such competition is being extended to other regions and may embrace other products. Another factor, creating an added threat to the coexistence of the two sectors, is the revelation by Khrushchev of considerably lower labor productivity in collectives than on state farms.

Liquidation of MTS

For the present, however, the question of the long-run displacement of the collectives by state farms is thrust into the background by the eclipse of the state machine-tractor stations. This is one of Khrushchev's major agrarian reforms.

As is well known, until recently, tractors, combines, and other modern farm machinery on which Soviet collective agriculture so vitally

depends, were owned and operated, with some exceptions, not by the collectives themselves but by special units, the state machine-tractor stations (abbreviated as MTS), which became a keystone of Soviet agrarian collectivism. MTS not only provided important services to the collective farms but also became a focal point of agricultural control and direction on the local level. They were, moreover, an important instrument of acquisition of farm products by the state, since they were compensated by collectives for their operations mostly by stipulated fees in kind; that is, by deliveries of grain and other produce. However, the MTS system also resulted in a dualism of farm management and divided responsibility or, as Khrushchev put it, in "two bosses on the land."[11] As a consequence there was much friction, waste, and inefficiency. The situation became especially incongruous with the merger of collectives, which sometimes resulted in cases when one MTS served only one large collective. That Soviet agriculture stood to gain from the removal of this dichotomy was long apparent to Western observers—and also, no doubt, to numerous specialists in the Soviet Union. But Stalin, to the very last, strenuously opposed liquidation of the MTS.[12]

There was no quick change in policy after Stalin. On the contrary, one of the first steps of the post-Stalin regime in the agrarian sphere was to enhance in various ways still further the important role of the MTS. And then, curiously, came an abrupt about-face. On January 22, 1958, following some limited public discussion by specialists, Khrushchev proposed that MTS were to sell most of their machinery to the collective farms and thus be divested of their vital functions and converted into mere service and supply centers. This radical reform was rapidly carried out. By December, 1958, 81 per cent of the collectives had acquired machinery on cash or credit.

In abandoning Stalin's legacy regarding MTS, Khrushchev was guided—to judge from his own utterances—by pragmatic rather than ideological considerations. The first was to eliminate dual farm management. Second, the apparent confidence that considerable strengthening of the party apparatus in the countryside during the past five years makes it feasible to dispense with the control function of the MTS. Third, the belief that the MTS also had become less necessary as an instrument of state acquisition of farm products. Fourth, the calculation of the leadership that, thanks to the increased prices and income of the collectives and anticipated economies from more efficient management, they would be capable of bearing the burden of the new expenditures involved in the purchase, its future upkeep and operation of the MTS machinery. Indeed, its purchase may be also desirable from the Soviet point of view as a proper channel for investment of part of their

increased income by collectives. For otherwise, the opportunity for productive capital investment by collectives is restricted if acquisition of machinery is barred, as it largely had been heretofore. After all, they could not forever go on building "cow palaces," as one specialist in the Soviet Union contemptuously called the far-too-elaborately constructed barns in which collectives heavily invested in recent years. The alternative to capital investment is, of course, a further increase of peasant earnings, but this is also limited by the pedestrian pace of the Soviet consumers' goods industry. There are thus some implications in the liquidation of MTS of disinflationary or deflationary character. At the same time, since the government fixes the prices of machinery, spare parts, and fuel bought by collectives, opportunities are afforded for a squeeze of the peasants. I am not suggesting that such a situation already exists; in fact, the reform gives freedom of choice in purchasing machinery—a privilege which the MTS never had. This may confront the Soviet monopolistic industry with a new situation in the marketing of machinery.

Barring a new squeeze, the reform should contribute, certainly in the long run, to greater over-all farm efficiency—this despite a possible reduction of mobility of skilled labor and equipment in some regions, which was a positive feature of MTS. Above all, it should make it possible to pinpoint managerial responsibility.

Decentralization of Planning

The liquidation of MTS may facilitate implementation of another Khrushchev reform; namely, decentralization of the agricultural planning procedure decreed in 1955. The decree assigned responsibility for detailed production planning of crops and livestock to collective farms themselves, instead of doing it largely from Moscow. Central planning was to be confined to the task of determining the delivery quotas for farm products and the volume of work to be performed by the MTS. Besides exerting its influence thus indirectly on farm production planning, the Kremlin could always step in and exert direct pressure on collectives, as in fact it has done, for instance, in the corn expansion drive. The folly of detailed rigid planning of agriculture from the top has long been obvious and the move toward decentralization is, therefore, in the right direction. It is of interest that Khrushchev and other Soviet spokesmen voiced criticisms of the old planning methods which sound very similar to those long expressed by Western specialists.[13]

In addition to the general difficulties which bedeviled all economic planning in the USSR because of inadequate economic yardsticks and criteria,[14] administrative obstacles arose to the implementation of the collective farm planning reform. The 1955 decree had given the MTS

a share in collective farm planning and had also accorded certain responsibilities in planning supervision to other local authorities with the result that these agencies often usurped the planning functions of collectives. It remains to be seen whether the elimination of the MTS will make grass-roots farm planning more effective.

Economic Incentives Revisited

Another important break with latter-day Stalinism made by his heirs was the increasing use of economic incentives in collective farming; that is, greater reliance on the proverbial carrot than on the stick. This, incidentally, harks back to earlier Stalin policies of the mid-thirties when economic incentives were invoked to spur recovery of agriculture from the ravages of the initial collectivization drive. But the earlier phase was a brief and fleeting one. To illustrate how unrealistic Stalin's policy became on this score, Khrushchev told, in his previously quoted de-Stalinization speech, of the late dictator's proposal to raise taxes on collective farms and their members by 40 billion rubles when they received in 1952, for instance, only 26.3 billion rubles for all their products delivered and sold to the state. Even taking into account the substantial additional earnings of collectives and their members from private trade, still Khrushchev's characterization of Stalin's proposal as based "on the fantastic ideas of a person divorced from reality" holds true.

The post-Stalin leadership adopted a contrary policy of substantially raising the very low prices previously paid by the government for farm products and reducing taxes. As a consequence of this and an increased farm output, cash income of collectives more than doubled between 1952 and 1956-57, increasing from 42.8 billion rubles to 95 billion rubles.[15] This in turn made possible cash payments to peasants in many collectives in which such distribution had formerly been negligible. The cash payments, in fact, more than trebled between 1952 and 1956, increasing from 12.4 billion to 42.2 billion rubles.[16]

Yet even the greatly increased volume of cash distributed in 1956 represents only an average cash income of something over 2,100 rubles per peasant family on the collective farms, a sum roughly equivalent to about $200 at a realistic rate of exchange. In 1952 the average was as little as 623 rubles, equivalent, with higher prices, to less than $60 per peasant household. Moreover, since distribution of cash in some areas of intensive crop production (such as cotton, sugar beets, etc.) are considerably above the average rate, many peasant families in the less prosperous collectives received much less than the average. However, it is well to remember that cash distribution by collectives is not the only major source of peasants' money income. As was pointed out earlier, the anomaly persists of the small household allotments playing not just

the theoretically assigned minor role of a mere subsistence-farming appendage but actually rivaling and often outstripping collective economy as a significant sources of peasants' income. In this connection, sales on the free market in the cities are very important. Total such sales exceeded 42 billion rubles in 1956, and less than 10 per cent were by collective farms themselves.[17] The rest were predominantly sales by members of collective farms—the *kolkhozniki*. However, receipts from private sales have become smaller in recent years and they no longer overshadow cash income from collective farms, though the situation varies widely from region to region and from farm to farm. The large, though diminishing, contribution of the household allotment farming to peasants' money income should help us to understand better the importance of such farming. By the same token, it underscores the serious dichotomy between dwarfism and giantism in the collective farm economy which has long been a thorn in the side of the Kremlin.

Much less information is available concerning what is still the most important component of peasants' income from the collective farms—payments in kind. Without such information it is impossible to adequately assess the changed economic position of the peasantry. However, since in-kind payments are mostly in grain and there were several large harvests in recent years, it can be assumed that more grain was distributed.

Another phase of the economic incentives program which merits attention is the effort to rationalize methods of paying the peasants in collectives. A significant straw in the wind is the fact that some collectives are experimenting with paying the peasants their share of the farm income entirely in cash, instead of using the traditional dual method of payment—partly in kind and partly in cash. In the process, the cumbersome workday unit system used in computing payments is often also abandoned. Where the new over-all cash payments system is adopted, the peasants merely purchase such products as they need from the collective, paying for them out of their earnings.

A more widespread innovation thus far has been the introduction of monthly or quarterly payments to the peasants in the form of so-called "advances," instead of relying, as was customary, entirely on end-of-the-year settlement. While the peasant, thus, still remains a shareholder in the collective, nevertheless, the effect of the advances is to render his payments more certain and prompt. The general success, however, of measures described above hinges on a substantial increase of the peasants' share of collective farm income and upon the growth of the income itself. But in the background of any substantial rise of money incomes in the Soviet countryside always lurks the dilemma of either to sharply increase the supply of consumer goods available to the population or to accept inflation. The Kremlin does not really appear to be

ready for the former—though it has done more along these lines than during the Stalin era—and clearly does not want the latter.

Be that as it may, the discussion thus far suggests that some improvement has taken place in the economic lot of the peasantry, compared with the bleak years of the Stalin epoch. This picture tends to be corroborated by personal and, therefore, necessarily subjective and limited impressions, based on travel in the Russian countryside in the summers of 1958 and 1935. I was struck, for instance, by the sight of bicycles in the villages in 1958, which were nowhere seen in 1935, and noted the absence of begging for bread by children, instances of which were observed in 1935. Yet a crucial question which arises at this juncture must be left unanswered for lack of information. It is whether the peasants, who lost their status as independent farmers a quarter of a century ago and suffered so much in the process, are satisfied with the current rate of progress; or are they perhaps, as is often the case in such situations, in a mood to demand much more, now that their living level is rising above the subsistence margin?

Increased Labor Input and Capital Investment

The Khrushchev Administration has not relied entirely on increased economic incentives in order to provide what it deemed an adequate supply of agricultural labor and to bring about an increased labor input. Drives were also organized to return to the farms skilled workers who migrated to cities, to bring farm specialists closer to grass roots, to enlist trusted party personnel or specialists as farm managers and, above all, to recruit several hundred thousand young men and women for agricultural development work in the eastern virgin lands regions. In addition, there have been the annual, or perennial, mobilizations of students and city dwellers to assist in harvesting crops. However, Khrushchev had for some time been critical of this makeshift practice and called for its elimination in his December 15, 1958, Report.

What of the effect of the various post-Stalin policies on labor input? While helpful statistics on this point are by no means abundant, we do have some clue, however imperfect, from the reported total number of workday units earned annually by peasants in collectives. Between 1952 and 1956 the total number of workday units increased by 25.5 per cent.[18] Incidentally, the figure for 1952 was still below prewar but in 1956 it was 19 per cent above. This improvement reflects both a larger number of workers and a greater contribution per worker. The latter is shown roughly by the claimed increase of the average number of "workday" units "per able-bodied" worker—from 295 in 1953 to 335 in 1957, or 13.6 per cent.[19] The increased contribution per worker, however, does not signify anything like a corresponding rise in the efficiency of labor.

For workday units do not measure uniformly labor input in different collectives. Moreover, Soviet sources often criticize the so-called "waste of workdays," meaning simply the wasteful, inefficient employment of farm labor. In fact, Khrushchev, in his December 15, 1958, Report, presented a striking statistical comparison between labor expenditures per unit of product in the United States and the USSR; thus confirming first-hand observations of Western specialists regarding low labor productivity in Soviet agriculture. Some of the data are shown in the following table.

LABOR REQUIREMENTS FOR CROPS AND MILK IN U.S.A. AND USSR

	Man Hours per Centner*			Percentage USSR is of U.S.A.	
	U.S.A.†	USSR‡			
		State Farms	Collective Farms	State Farms	Collective Farms
Grain	1.0	1.8	7.3	180%	730%
Potatoes	1.0	4.2	5.1	420	510
Sugar beets	0.5	2.1	3.1	420	620
Seed cotton	18.8	29.8	42.8	160	230
Milk	4.7	9.9	14.7	210	310

* Centner equals one-tenth of a metric ton or 220.46 pounds.
† In 1956.
‡ Average for 1956–57.

The Soviet leader alleged—without any real justification—that U.S. figures may possibly "color up" the picture by underestimating labor expenditures while the Soviets perhaps overestimated them. Nevertheless, he stressed that the gap is still a wide one and this can be accepted as an indisputable fact. However, one significant aspect of Soviet labor requirements figures not mentioned by Khrushchev should not be overlooked; this is that they reflect a much heavier proportion of women engaged in farm work in the Soviet Union than in the United States. The only other comment I would like to make is that the very frankness with which such comparative data are disclosed is an added testimony to a deep concern of Soviet leaders with raising labor productivity in agriculture.

Still another departure from Stalinist policy that has characterized Khrushchev's regime is the increase of capital investment in agriculture. That agriculture during the Stalin regime served as an important source of capital accumulation for financing a lopsided industrialization program is well known. What Stalin called "something like a tribute"[20] was defined by others, like Preobrazhensky, in more subtle terms as the "law of original socialist accumulation." In effect, this doctrine relegates peasant agriculture to a role vis-à-vis the socialist industrial sector

somewhat similar to that which the Marxian theory of "original capitalist accumulation" assigns to exploitation of colonies in the process of enrichment and economic development of capitalist countries. Under Khrushchev, greater recognition has been given to the capital needs of agriculture itself. The collectives have been spurred to increase their own capital accumulation out of the increased income. Their officially estimated capital investments more than doubled between 1952 and 1957, increasing from less than 10 billion to more than 23 billion rubles.[21] The so-called "indivisible fund," representing the capital assets of collectives, was estimated at 63 billion rubles at the end of 1952 and at 102 billion at the end of 1957, a rise of more than 60 per cent.[22] Parenthetically, it may be noted that sizable collective farm investments acted as a brake on the rise of the peasant money income. In addition to using their own resources for capital investment, there were also available to collectives increased long-term state credits in recent years. Finally, government capital investments in agriculture in 1956 were officially estimated in July 1, 1955, prices at 20.9 billion rubles compared with a total of 63 billion during the preceding five years and 24.8 billion during 1946-50.[23]

Despite the marked improvement of the position of Russian agriculture during the Khrushchev era with respect to capital investment, it is still inadequate to use land and labor effectively. From this inadequacy stems, for instance, the imbalance in mechanization. Some operations, such as cutting of grain, are highly mechanized, while others, such as cleaning and drying of grain, are to a large extent still carried out inefficiently by hand labor. Another example is the inadequate development of irrigation in the extensive subhumid zone, which would pay off in higher per acre yields. As a matter of fact, Stalin's program of irrigation of a large area in the European USSR was largely deflated.

Another type of deficiency is a qualitative one, characterized by the wastefulness and diminished economic, and sometimes even physical, effectiveness of some forms of capital investment. I mentioned the cow palaces. Then there are the tractors which are much larger in size than needed. But this particular "gigantomania" was inherited from the Stalin regime and is being corrected under Khrushchev.

Procuring Reform

Let us turn now to what is perhaps one of the most crucial areas of reform in Soviet agriculture: that of the procurement system for farm products. The fundamental importance in Soviet economics and politics of acquisition of farm products by the state is well known. It runs like a red thread throughout the whole Soviet history. It was at the root of both Lenin's New Economic Policy (NEP) of 1921 and of Stalin's

rural collectivization a decade later. It helped to kindle the bitter intra-party strife in the twenties and it was a basic presupposition of the industrialization program under the five year plans. It is through government procurements and prices paid for them that economic incentives and disincentives to the farmers largely operate. The Khrushchev regime, emphasizing economic incentives, substantially raised, as I indicated earlier, the prices paid by the government for farm products. Compulsory deliveries by peasants from their little private plots and livestock were gradually abolished.

The procuring system, however, as it had developed over a period of years, was characterized by a considerable diversity of methods or types of procurement of the same commodity and by a corresponding multiplicity of prices. Basic to all were the compulsory delivery quotas, calculated as so much grain, potatoes, meat, etc., per unit of tillable or total land. The lowest price was usually paid for this type of procurement. Next, there was the so-called "contracting" method used for industrial and intensive crops like cotton, sugar beets, etc. Though essentially similar to compulsory deliveries, this method involved a graduated price scale, depending upon the quantities delivered. Then there were the extra-or-above-quota purchases by the state for which considerably higher prices were paid since 1953 than for the compulsory deliveries. In recent years the extra-quota purchases became increasingly important, while lower priced compulsory delivers declined. Finally, there were payments in kind for the work of machine-tractor stations, which, of course, are now being eliminated with the dissolution of the MTS.

The reform of 1958 unified the different types of procurement into a single system of state purchases.[24] While compulsory deliveries as such were nominally abolished, nevertheless the new system retains quotas per unit of land which collectives are supposed to meet. Instead of multiple prices, single prices are now fixed by the state for each commodity within a region. Although price stability is one of the aims of the reform, provision is nevertheless made for raising or lowering of prices to cope with sharp fluctuations in output. Thus some recognition is given to the law of supply and demand. Another important change is the abolition of the variable premium prices used for some crops and highly profitable to collectives growing such crops in considerable volume.

These changes simplified the cumbersome procurement and price system. There can exist now only two prices for a commodity in each locality: a government price and a free market price if a commodity is traded on the limited private market. This is still a far cry from a rational price system, the lack of which, as many Western economists pointed out, greatly handicaps economic calculations and planning de-

cisions in the Soviet Union. But the reform takes at least a small step toward such a goal.

Lack of sufficiently detailed data on procurement prices hinders discussion of the recent price changes. However, it can be stated on the basis of what is available that the new prices are considerably higher than the old compulsory delivery prices, which, it will be remembered, even after they were raised in 1953-54 were still the lowest among the different categories of state fixed prices. For a number of commodities the new prices are lower than the former extra-quota purchase prices; for others, they are on the same level or somewhat higher. The abolition of premium price payments will, no doubt, hit the collectives growing such crops as cotton, sugar beets, hemp, and others which received preferential price treatment. So much was openly admitted by Khrushchev, who contended that the more productive collectives should obtain higher income, not from price differentials, but by lowering of production costs and increasing output.[25] In any event, the average prices paid by the state to such collectives will be lower and so will probably the gross money income. This may have an adverse effect upon the output of certain crops in these usually more productive farms, which may or may not be compensated by increased production of other farms. In general, the new prices appear to have been tailored to benefit the average or less prosperous collective farms. The guiding principle was stated by Khrushchev as follows: "Although the total expenditures of the state for the purchase of agricultural products will remain approximately at the same level as last year, they will be distributed more fairly among the collective farms, thanks to the new prices."[26] Khrushchev indicated further that the total procuring expenditures include also the expenses formerly incurred by the state for the machine-tractor stations which are now borne by the collectives themselves.

The stability of the aggregate procuring expenditures, announced by Khrushchev, is of great significance. If the same principle is continued beyond 1958 and is consistently adhered to, it will tend to act as a ceiling on the money component of the gross collective farm income in years of good crops and perhaps as a floor precluding a sharp drop in income in years of poor harvests. This would mean that the expansion of the total farm income in good crop years would take the form principally of an increase in the in-kind component and possibly in receipts from private trade.

As a matter of fact, the stated objective of Soviet price policy in the years to come is that of achieving lower prices, concomitant with a reduction of the production costs. This brings up a new important facet of the procuring policy. I have in mind the projected concentration of procurements in areas of most economical production, instead of re-

quiring every region from the Baltic to the Pacific and from the Arctic to the Black Sea to deliver identical products like grain, for instance. This move is linked with what appears to be now more than a mere academic concern (as it had long been) with regional agricultural specialization. And regional specialization is to be based on production cost studies. This cost consciousness is itself a new phenomenon in the management of Soviet agriculture, heretofore preoccupied almost exclusively with fulfillment of physical targets; and here is where the economists come in. There is a new interest in the theory and methodology of farm costs, and cost investigations extending beyond single farms, which had not been undertaken since the late twenties, have been resumed.[27] Khrushchev himself reflected the new cost consciousness when he said in his December 15, 1958, Report: "It is impossible to carry on farming without a thorough analysis of the cost of commodities being produced, and without control by means of the ruble." Shades of Alfred Marshall and the measuring rod of money! The Soviet leader is talking like an economist.

New Production Programs

The increased inputs as well as certain shifts of resources contributed to the direct production program to boost agricultural production instituted by Khrushchev.

His favorite project, the one that he has been most intimately associated with and has strongly pushed, is the campaign to greatly expand corn growing, undertaken in order to bolster the lagging feed supply and thus to strengthen the weak livestock sector. Here Khrushchev, who has long been known as a corn enthusiast, was frankly influenced by the example of the United States—this despite the much more favorable climatic condition for corn growing in the latter compared with the Soviet Union. This project, however, has met only with limited success. It is true that the corn acreage increased more than fivefold between 1953 and 1958 and reached a large figure of 48.7 million acres. But Khrushchev himself was scornful with respect to more than half of this acreage, on which corn was either harvested for silage before the ears were formed or reported as used for green forage.[28] While his enthusiasm for corn as a "queen of the fields," as a basic feed crop has apparently remained unabated, nevertheless he has adopted a somewhat more cautious tone in his recent pronouncements on the subject.

By far the most important of the recent Soviet production programs is the large extension of acreage, mostly under spring wheat, on the virgin and long uncultivated land in the subhumid and semiarid zones east of the Volga and the Urals. It is, of course, the traditional Russian method of expanding production by extensive farming rather than by

intensifying agriculture, and it has been proceeding in these eastern regions since the turn of the century. I discussed it before and will not go into detail now.[29] I would only like to indicate the magnitude of this expansion. In the course of three years, 1954-56, more than 20 per cent or about 90 million acres were added to the Soviet crop area. This is almost equal to the combined arable land of France, Western Germany, and the United Kingdom, and the achievement should not be underestimated. To be sure, most of this new acreage is in a zone of unfavorable climatic conditions—of a short growing season and frequently recurrent devastating droughts, and a late and often rainy and cold harvesting season.[30] It is, therefore, a zone of hazardous agriculture, characterized by low-average and sharply fluctuating crop yields. Yet, while the average crop yields per acre are low, the multiplier of the huge acreage made possible a substantial increase of production of food and feed and, therefore, of livestock numbers and of the output of animal products. Large production occurred, particularly in years of good weather and, above all in 1958, when weather conditions were favorable during the growing season in most of the important regions, which is exceptional in the USSR.

This should be borne in mind in making comparisons of agricultural production with the mediocre crop years in the early fifties—like 1953, for instance. Furthermore, the high Soviet 1958 production figures for grains, milk, meat, etc., cannot be accepted at face value without further examination of supporting detailed data on regional yields and production, which are for the most part lacking. In fact, the figures appear to be too high; even though the so-called "biological method" of estimating crops, which greatly exaggerated production statistics, was officially abandoned in 1953 and its use in the past condemned by Soviet leadership. Such biological estimates, by the way, were always heavily scaled down in the statistical reports of the U.S. Department of Agriculture. Whatever the reliability of recent Soviet statistics, however, there can be no doubt that Soviet agricultural production has been lifted to a higher level during the Khrushchev period.

Nevertheless, there is good reason to believe that if the potentialities of the regions with more favorable climatic conditions were better exploited, the expansion on what is mostly marginal land in the eastern regions would not have been necessary—certainly not necessary to the same extent. But the alternative presupposes an increase of per acre crop yields and more efficient and intensive agriculture. Under the collective system of agriculture, however, it has proved much easier to expand acreage than to increase yields, except in restricted sectors where a heavy concentration of resources is employed as, for instance, in the case of cotton. The serious climatic obstacles to high yields in

the Soviet Union also should not be overlooked. Yet it is precisely on the improvement of yields that the high agricultural targets of the new seven year plan, 1959-65, are predicated. This fact makes them much less realistic, even though some further agricultural gains may be expected in the years to come. But do not forget the weather, which cannot be planned, even in the Soviet Union. Like the little girl in the nursery rhyme, the weather, in its effect on agricultural production in the USSR, when it is good, it is very, very good, but when it is bad it is horrid.

To sum up, the impact on Soviet agriculture of most of the reforms of the Khrushchev era which I briefly traced here can be rated as positive, though the persistent predilection of the regime for farm giantism seems negative. However, there is one over-all reservation which must be borne in mind even with respect to the positive measures: They are subject to limitations by reason of the simple fact that the Khrushchev leadership has confined itself within the ambit of Soviet agrarian collectivism and industrialization policy. The latter spells continued overemphasis on heavy industry and underemphasis on consumers' and other goods needed to assure the Soviet farmer of a real measure of well-being.

FOOTNOTES:

[1] Lazar Volin, "The Malenkov-Khrushchev New Economic Policy," *J.P.E.*, June, 1954, pp. 187-209.

[2] Report to the Central Committee of the Communist Party of the USSR on December 15, 1958, on "The Results of the Development of Agriculture during the Last Five Years and the Problems of the Further Increase of Agricultural Production," *Pravda* and *Izvestiya*, Dec. 16, 1958. It will be referred to hereafter as: Khrushchev's *Report of December 15, 1958*.

[3] See: *Foreign Agriculture*, Sept., 1957, p. 11; Naum Jasny, *The Soviet 1956 Statistical Handbook; A Commentary*, pp. 99-102.

[4] "The Soviet Economy Outpaces the West," *Foreign Affairs*, July, 1953, pp. 489-508.

[5] By the spring of 1956, total population of the Soviet Union was a little over 200 million, according to a Soviet estimate, which was smaller than those previously attempted by a number of Western specialists. However, the 1956 reported figure exceeded all estimates for the prewar period, indicating that the heavy war losses of population were more than overcome. Urban population constituted, according to the official 1956 estimate, 43.4 per cent of the total, compared with 32.9 per cent for the smaller prewar territory, according to the census of Jan. 17, 1939. More precise information on Soviet population will become available when the results of the census of Jan., 1959, are published. See M. K. Gordon, "Notes on Recent Soviet Population Statistics and Research," *Population Index*, Jan., 1957, pp. 2-16.

[6] Khrushchev's high opinion of Lysenko has been voiced on several occasions. Among some of the recent evidence of Lysenko's "comeback" is the appearance in *Pravda* of Dec. 14, 1958, of an unsigned lengthy article entitled, "Concerning the Agrobiological Science and the False Position of the *Botanical Journal*," criticizing the Soviet and Western critics of Lysenko's research methods and theories. Subsequently considerable prominence was given to the attack of Lysenko himself on the Biological Department of the Academy of Science at the Meeting of the Central Committee of the Communist Party (*Pravda*, Dec. 18, 1958). This was followed by a report that the editorial board of the Soviet *Botanical Journal*, which was foremost in recent criticisms of Lysenko, was dismissed and that "the Academy's Biological Department was to be improved" (*New York Times*, Jan. 21, 1959).

[7] For an account of this campaign during the Stalin period see: Lazar Volin, "The Turn of the Screw in Soviet Agriculture," *Foreign Affairs,* Jan., 1952, pp. 277-288.

[8] *Pravda,* June 29, 1956.

[9] See, for instance, theses of Khrushchev's report on: "Further Development of the Collective Farm System and the Reorganization of the Machine-tractor-stations," *Pravda* and *Izvestiya,* Mar. 1, 1958.

[10] *Sel'skoe Khozyaistvo,* Nov. 2, 1958.

[11] Khrushchev's speech on Jan. 22, in Minsk, *Pravda* and *Izvestiya,* Jan. 25, 1958.

[12] J. Stalin, *Economic Problems of Socialism in the USSR* (Moscow, 1952).

[13] *Pravda* and *Izvestiya,* March 21, 1954.

[14] It would seem that the goals of specified quantities of meat and milk per 100 hectares of land, which is the latest fashion in Soviet agricultural planning, can hardly be considered an adequate planning guide from the standpoint of a collective farm manager.

[15] *SSSR v Tsifrakh* (Moscow, 1958), p. 200.

[16] Khrushchev's speech in Minsk, *Pravda* and *Izvestiya,* Jan. 25, 1958.

[17] *Sovetskaya Torgovlya,* No. 8, 1958, p. 14, gave the collectives' share in the *kolkhoz* (free market) as 8 per cent.

[18] *Narodnoe Khozyaistvo v 1956 Godu,* p. 140.

[19] *SSSR v Tsifrakh,* p. 198.

[20] J. V. Stalin's *Collected Works* (in Russian), Vol. 12, p. 140.

[21] *Narodnoe Khozyaistvo v 1956 Godu,* p. 173, and *SSSR v Tsifrakh,* p. 254.

[22] *Narodnoe Khozyaistvo,* p. 173, and *SSSR v Tsifrakh,* p. 198.

[23] *Forty Years of Soviet Power in Facts and Figures,* p. 193.

[24] Decree of the Central Committee of the Communist Party on abolition of compulsory deliveries, etc., *Pravda,* June 20, 1958, and Decree of the Council of Ministers of the USSR on the same subject, *Pravda,* July 1, 1958.

[25] Khrushchev's speeches, *Pravda,* June 21, 1958, and *Sel'skoe Khozyaistvo,* Oct. 21, 1958.

[26] *Pravda,* June 21, 1958.

[27] M. L. Terentiev, *Sebestoimost' Kolkhoznoi Produktsii* (Moscow, 1957), p. 5.

[28] *Pravda,* Dec. 21, 1958.

[29] "The New Battle for Grain in Soviet Russian," *Foreign Agriculture,* Nov., 1954, pp. 194-199.

[30] *Cf.* Chauncy D. Harris, "Soviet Agricultural Resources Reappraised," *J. of Farm Econ.,* May, 1956, pp. 258-273; and W. A. D. Jackson, "The Virgin and Idle Lands of Western Siberia and Northern Kazakhstan: A Geographical Appraisal," *Geographical Rev.,* Jan., 1956, pp. 1-19.

SOVIET FOREIGN ECONOMIC COMPETITION

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The idea of economic competition is no new thing in Soviet history. During the first great burst of industrial growth in the thirties, the reader of the Soviet press was frequently reminded of the goal of "overtaking and surpassing the United States." That goal still occupies a prominent place in Soviet economic writings, but with a notable difference: twenty-five years ago it sounded a bit quixotic, but when we see it today in the new Seven Year Plan, it reads as part of the program of the not-too-distant future. The traveler in the USSR cannot fail to be impressed with the prominence of this goal in the minds of Soviet economic officials and with their confidence that the day of attainment is not far off. "Just give us ten more years without war, just ten years more," a Soviet factory manager told me last summer in a tone of dead earnestness, "and you won't be able to tell Moscow from New York or New York from Moscow."

It takes two to make a quarrel, and we should expect that it would take two to make a competition as well. The bizarre aspect of this economic contest is that only one of the parties is racing. The lagging contestant is bending every muscle to close the distance between himself and the leader. The leader is apparently aware of his involvement in a fateful race, but does not seem to be doing anything in particular about it. He strolls amiably down the path of history, dallies from time to time at a wayside recession, and conducts his business-as-usual of satisfying customers' preferences. It is a queer competition in which only one competitor is competing.

During Stalin's lifetime the economic competition remained largely a bilateral (or perhaps unilateral) race on the field of domestic economic growth. Since his death, the new Soviet leaders have expanded the contest into the field of foreign economic relations. With their dialectical eye transfixed not only on the world of today but also on that of the future, Soviet economic policy has turned toward the underdeveloped countries. My purpose is to explore the nature and implications of recent Soviet economic policy in these lands.

The most dramatic component of the new policy is the series of long-term credit agreements under which the USSR and her allies have undertaken a variety of construction and technical assistance projects in underdeveloped countries. After a slow start in 1953 and 1954, in 1955 a number of nonmilitary credit agreements were signed totaling about 190 million dollars. Then in 1956 the figure quintupled to about

960 million dollars. This rapid build-up was the cause of the great consternation felt in the West at that time. Certainly, if one projected this sudden rate of increase into the future, as some observers were prone to do, the prospect was rather alarming. As it turned out, however, the rate of new credits extended in 1957 fell sharply to about 235 million dollars, or roughly one quarter of the 1956 peak, although an additional 175 million dollar loan to Egypt was under negotiation at the year's end. In view of the momentous events in Poland and Hungary in 1956, the fall in new lending in 1957 cannot be attributed entirely to deliberate Soviet policy, nor to increasing reluctance on the part of potential new borrowers. But the indications are that in 1958 new lending has continued at a level below the 1956 peak. Highly tentative estimates place the volume of new loans in 1958 in the range of 500 to 600 million dollars, of which 275 million has been extended to Egypt alone. However, in May, 1958, the USSR unilaterally postponed for an additional five years the outstanding portion of 285 million dollars of loans previously extended to Yugoslavia. Hence net new loans in 1958 are at roughly the 1957 level. The period is obviously too short to warrant a generalization about trend, but it is clear that the worried projections of 1956 have not been borne out in fact.

As of the beginning of this year, the total of all nonmilitary credits provided for in the agreements signed since 1953 amounted to about 1.6 billion dollars. Perhaps the outstanding characteristic of the distribution of the total is the high degree of concentration. The USSR alone accounted for 75 per cent of the credits extended, and the USSR and Czechoslovakia together accounted for 89 per cent. Among the recipients, the three largest borrowers have recieved 87 per cent of the total; they were Yugoslavia, the UAR, and India. If we exclude Yugoslavia as a special case, which we must certainly do in the light of the subsequent history of the Yugoslav loans, the two remaining large recipients still accounted for 78 per cent of the total. Thus, while some fourteen countries had entered into credit agreements, the bulk of the credits had been heavily concentrated in a few of them.

It should be stated forthrightly at this point that the figures I have presented are estimates and not official data. The Soviet government publishes no official accounting of the aid program, although the major agreements have appeared in highly publicized official communiques. Many of the smaller agreements are known only through occasional newspaper or radio reports in the recipient countries and values are not always given. Since some agreements may have escaped public attention entirely, these estimates are probably on the low side, though not by a substantial percentage.

One and six-tenths billion dollars is a large figure, but its significance

has sometimes been rather exaggerated in public discussion by failure to point out (*a*) that it is a cumulative total covering several years and therefore not comparable with U.S. annual foreign aid figures and (*b*) that the total consists of what are essentially promises to deliver sometime in the future. It includes, for instance, the 100 million dollar credit to Indonesia, which will not be fully drawn upon for a number of years. While the 1.6 billion dollar figure is relevant for some purposes, it would be of great interest to know what the rate of actual deliveries has been.

In the absence of an official Soviet accounting, it is impossible to provide any precise figures on deliveries. But if we are content with orders of magnitude, it is possible to provide some estimates. My method was to estimate the time-phasing of deliveries under each separate credit agreement, employing whatever bits of information happened to be available. In some cases actual or anticipated completion dates were known. The experience of the International Bank in the rate at which funds are disbursed under its loans also provided a rough guide.[1] The results are highly suggestive. By the beginning of 1957, when the cumulative total of agreements signed had reached 1.2 billion dollars, actual deliveries had been somewhere between 130 million dollars and 200 million dollars, or between 11 and 17 per cent of the total of agreements. During 1957, as noted earlier, new credits fell and deliveries under old credits rose, so that by the beginning of 1958 deliveries had amounted to 20-25 per cent of the total of agreements signed. This considerable delay between agreements and deliveries is perfectly normal and in no way reflects on Soviet willingness to honor its commitments, but it does suggest several observations. First, the USSR has been able to reap a propaganda bonus for a large volume of aid promises without having to "pay up" for many years. And second, the Soviet economy has not yet felt the full impact of the aid program, for 75-80 per cent of all the aid promised as of the beginning of this year had still to be delivered.

Since the subject of this paper is economic competition, it would be well to provide some guideposts in what might be termed comparative philanthropics. Looking, first, only at the fourteen countries that had signed credit agreements with the USSR and her allies, in 1956 actual Soviet bloc deliveries to these countries amounted to roughly one-third of U.S. government nonmilitary aid deliveries. In 1957, however, U.S. aid deliveries actually declined while Soviet deliveries increased, and Soviet deliveries rose to about 60 per cent of U.S. deliveries. With the momentum generated from past aid agreements, Soviet deliveries have probably continued to climb relative to the U.S. in 1958 and have un-

[1] The details of the estimates may be found in Joseph S. Berliner, *Soviet Economic Aid* (New York: Praeger, 1958).

doubtedly surpassed the U.S. in a number of countries.

Now for the inevitable and vital caveats. It is important to note that roughly 80 per cent of the U.S. deliveries consist of nonrepayable grants and the balance of long-term credits. The aid provided by the USSR and her allies, in contrast, consists almost entirely of credits. Of the many implications of this difference in the two aid programs, the following may be noted. First, acceptance of Soviet aid places a greater burden on the recipient's balance of payments than an equivalent value of U.S. aid. Second, by relying on long-term credits, the Soviet aid program establishes a long-run economic tie with the recipient, involving an increase in trade for many years. Third is the perverse observation that by stressing credits the Soviet leaders have represented their program as a businesslike contractual assignment among sovereign equals, devoid of political strings, whereas the large proportion of free grants in the U.S. program has been represented as evidence of the political domination of weaker nations by a more powerful one. There is considerable evidence that the acceptance of credits does less violence to the dignity of the recipient than the acceptance of grants.

We have compared thus far only long-term nonmilitary governmental aid. If we should ask what is the total value of aid flowing to these fourteen countries from the two sources, the U.S. side of the ledger would begin to mount rapidly compared to the Soviet. For instance, U.S. assistance in the form of the sale of agricultural commodities for local currencies amounted in 1957 to over twice the total value of Soviet aid deliveries. For some purposes, it would be appropriate to point out that while the underdeveloped countries receive only governmental credits from the USSR and her allies, the credits they receive from the U.S. come not only from the government but from private sources as well. We should therefore add the credits extended to the International Bank from loans floated in the U.S. and perhaps the direct and portfolio investment by U.S. firms in those countries. These additions raise the volume of U.S. aid far above that of Soviet aid. The comparison in these terms is useful for some economic purposes: if one were interested in total foreign sources of new capital formation, for instance. But this kind of comparison obscures some vital differences which from a political point of view are more important than a simple numerical comparison. A dollar's worth of our surplus wheat does not at all have the same psychological impact as a dollar's worth of Aswan Dam or Bhilai steel mill: the wheat quickly disappears in the process of consumption, while the structure lives on as an enduring monument. Nor does a dollar's worth of private U.S. direct investment have the same political effect as a dollar's worth of Soviet: a U.S. petroleum refinery remains a symbol of foreign economic domination, a perpetual and inviting target for the

next wave of nationalism, whereas when the Soviet engineers finish their steel mill, they turn it over to the Indian people and go back home. Least of all ought the global preponderance of U.S. aid in all forms be a source of complacency, for Soviet aid is heavily concentrated in a few countries and may well have a crucial political impact there. Perhaps all that can be said about the over-all preponderance of U.S. aid is that talk of Soviet aid replacing that of the U.S. in the foreseeable future is nonsense. It is in the relatively few countries where the Soviet program is concentrated that the problem lies.

The Soviet credit program has been accompanied by an increase in the volume of normal commercial trade with the underdeveloped program. Unlike the credit program, in the trade expansion program, the East European countries have assumed the major role. While the volume of Soviet trade with the underdeveloped countries has been rising steadily since 1953, Soviet trade with the whole non-Communist world has also been rising. Soviet trade with the underdeveloped countries, as a proportion of trade with the whole non-Communist world, has shown a very modest increase. In 1956 it rose by about two percentage points, an increase which was more than offset by a fall of about four percentage points in the corresponding ratio for East European trade. In 1957, Soviet trade with the underdeveloped countries as a proportion of total trade with the non-Communist world rose by another three percentage points. The pattern of trade in 1957 shows the sharp effect of rising deliveries under the credit program. According to Soviet data (*Vneshniaia torgovlia*, 1958, No. 8, pages 14-18) total trade with eleven major underdeveloped countries (including Yugoslavia) rose by 35 per cent in 1957 compared to 1956. Almost half the volume of trade is accounted for by the same three countries that are the largest recipients of Soviet credits: Yugoslavia, the UAR, and India. Soviet trade with these three countries alone increased 75 per cent. Trade with the other eight countries decreased by 3 per cent. It is evident that the expansion of trade is due in large measure to Soviet willingness to grant credits.

The future of the Soviet credit program depends among other things on the ability of the Soviet economy to support the program. If one looks first at the size of the Soviet gross national product, it is clear that the aid program constitutes an extremely small percentage. The estimated volume of deliveries under the credit program in 1957 is equivalent to about 0.1 per cent of total consumption expenditures and about one-half of one per cent of defense expenditures. Even if the credit program expanded to the absolute size of the present U.S. aid program to all underdeveloped countries, it would still be equivalent to about 1 per cent of total consumption expenditures, though it would amount to almost 5 per cent of defense expenditures. The 1957 rate of deliveries is

equivalent to about 1-2 per cent of the annual increase in Soviet national product. An aid program designed to match the size of current U.S. economic aid would be equivalent to about 12 per cent of the annual increase in Soviet national product.

While these global magnitudes are of some interest, they obviously do not tell the whole story of Soviet capability. For one thing, in the short-run at least, a program which may look small compared with the GNP may nevertheless pinch badly in certain sectors of the economy. The commodities exported under the credit agreements are heavily concentrated in the machinery industries. Rough estimates indicate that the 1957 machinery exports on credit were equivalent to about 1-4 per cent of total Soviet machinery production; a credit program designed to equal the U.S. aid program would require something like 17-35 per cent of the annual increase in Soviet machinery production. The problem grows keener if we examine individual branches of the machinery industry. For instance, in Gardner Clark's study of the Soviet iron and steel industry it is reported that a Soviet steel mill, roughly equivalent to that currently being built by the USSR in India, requires 46 thousand tons of metallurgical equipment. This amounts to over one-quarter of total Soviet production of metallurgical equipment in 1957. The annual increase in the production of metallurgical equipment has been about 20 thousand tons. It is clear that if a number of underdeveloped countries simultaneously line up for new steel mills, they will not all be accommodated.

But if the global GNP estimates gave too sanguine a picture of Soviet capabilities, these individual industry ruminations perhaps understate Soviet capabilities. For one thing, there is no evidence that the aid deliveries have indeed concentrated on a few industries. But more important is the fact that in the longer run, short-run inelasticities may be modified. The exports on credit are not a gross loss, but will eventually be repaid in imports. These imports can conceivably release domestic Soviet resources that may then be reallocated toward the industries that are providing most of the exports. The course of the argument thus confronts us directly with one of the more interesting theses that have been advanced in the interpretation of the Soviet aid program. That thesis is the application of the doctrine of comparative advantage to the pattern of Soviet trade with the underdeveloped countries. The argument is as follows: In the thirty years since the inception of the five year plans, the productivity of Soviet industry in processing the mineral and agricultural products of the land has increased greatly. During the same period, the USSR has encountered diminishing returns in the extraction of the mineral and agricultural products of the land. Thus the costs of producing finished industrial products have declined

substantially relative to the cost of primary agricultural and mineral production. The application of the doctrine of comparative advantage suggests that today it may be cheaper for the USSR to obtain its primary products by import rather than by domestic production and to pay for the imports by exporting the products of her more advanced industries.

The argument may be evaluated on two levels: First, do the data support the contention that Soviet comparative advantage has indeed changed in the indicated direction? And, second, if the indicated change has occurred, is there evidence that the USSR is reallocating its resources in such direction as to take advantage of the gains from the new pattern of trade?

There is abundant evidence that the average quality of coals and iron ores mined today is poorer than those mined in the twenties, before the industrialization drive began. The mines are being sunk deeper, the seams are thinner, gas and coal bursts seem to have increased, the proportion of low-grade lignite has been increasing as a percentage of total coal production, and production plans provide for larger quantities of iron ores to be charged to the blast furnace per ton of pig iron produced. In agriculture, the major push of grain production into the marginal lands of Kazakhstan and Western Siberia and the effort to expand corn production in areas which seem ill-suited to it are a classical illustration of Ricardian rent theory, with an expanding population pushing into more marginal lands.

While evidence of this kind is persuasive, it is by no means conclusive. It is quite conceivable that technological improvements have offset the mounting niggardliness of nature. What we should wish to know is not simply how the costs of primary production have moved but how they have moved relative to the costs of industrial production. For lack of data on Soviet production costs, we can do nothing but rely on relative prices, for which a good deal of information is available. The question of the adequacy with which Soviet wholesale prices reflect relative costs is one of the thorniest in the field, but recent price studies suggest that at least in certain bench-mark years—the years in which major price reforms were introduced—relative prices did bear some sort of rough correspondence to production costs.[2] The years 1928 and 1950 are two of those bench-mark years, and an examination of the 1950 price indexes of a wide variety of commodities shows the following: among the commodities whose prices rose to an index of over 1,000 (with

[2] Lynn Turgeon, "Cost-Price Relationships in Basic Industries During the Soviet Planning Era," *Soviet Studies*, Oct., 1957. Abram Bergson, Roman Bernaut, and Lynn Turgeon, "Prices of Basic Industrial Products in the U.S.S.R., 1928-1950," *J.P.E.*, Aug., 1956. Richard Moorsteen, *Prices of Railroad Rolling Stock, U.S.S.R., 1927-28—1949* (Santa Monica: RAND, 1954), RM-1258.

1928 = 100) are coke, coal, and nonferrous alloys; the indexes of blast furnace products and iron ore were 670 and 602 in 1950; and at the lower end we find trucks and automobiles (88), roadbuilding and construction machinery (116), tractors (173), diesels (258), and steam turbines (360). What does it all add up to? Certainly the minimal statement that one can make is that the data are not inconsistent with the proposition that relative costs in the fabricating industries have fallen sharply compared to the costs of primary production.

If world terms of trade had remained unchanged over the period, the changes in relative production costs within the USSR would have moved the USSR closer to the position of a capital-goods exporter, if not all the way. In fact, the world terms of trade have moved in precisely the opposite direction. Exports of manufactured products from the developed countries in the present decade exchange for a substantially greater quantity of raw material imports from the underdeveloped countries than they did in the twenties. History has been on the side of the USSR in this respect. During the period in which it was becoming relatively more costly for the USSR to produce its own primary products, it was also becoming relatively cheaper to import them from the underdeveloped countries. The change in the world terms of trade thus accelerated the movement of the USSR toward the position of an exporter of manufactured goods.

But has the USSR moved all the way over to a relative cost position at which exports of manufactured goods are now advantageous? The kind of evidence presented above cannot provide an answer to this question. All we can say is that the Soviet comparative advantage in primary product production in 1928 has been considerably reduced in the course of thirty years. The data are not inconsistent with the possibility, for example, that the progress of thirty years has done no more than bring relative costs within the USSR to a level approximately equal to prices in world trade. If this were so, the trade and aid program would involve neither a gain nor a loss.

It should be noted in passing that these arguments do not apply to the more highly industrialized countries of Eastern Europe, particularly Czechoslovakia and East Germany. To these countries, which stand on a higher plane of industrialization than the USSR, the potential gains from trade with the underdeveloped countries are undoubtedly substantial. Moreover, with lesser endowments of natural resources than the continental USSR, the expansion of trade is of greater economic benefit for them than for the USSR. It is likely that such economic pressures for trade as exist in the Communist world are generated more among the East European allies than within the USSR itself.

While there is no conclusive evidence that the USSR has swung far

into the position of an exporter of manufactures on the basis of comparative cost considerations, it is probably true that, with respect to specific commodities, there are substantial gains to be enjoyed from trade. If we array all commodities in a column such that at the top appear those in which the ratio of ruble cost to world price is lowest and at the bottom are those in which the ratio of ruble cost to world price is highest, then we should probably find a number of commodities at the top that could most advantageously be exported in exchange for those at the bottom. If the present aid and trade program were based on economic considerations, these are the commodities that the USSR should be most interested in exchanging. Has Soviet foreign economic competition been conducted in such terms as to indicate a concern for the precise commodities that are to be exchanged?

If anything, the opposite is true. The typical Soviet approach to the underdeveloped countries, both in proposals of credits and trade, is "just tell us what you want and we will sell it to you; and we will accept repayment in whatever commodities you normally export." The character of the negotiations suggests that whatever economic motivations may exist for this trade, they are submerged beneath the political objectives. But more to the point is the following: If there is a strong economic motivation based on comparative advantage, there must be taking place within the Soviet economy a reallocation of resources, involving a planned reduction in domestic production of the commodities to be imported, and an expansion of capacity in the industries intended to generate surpluses for export. Is there evidence that such a reallocation is taking place?

No definitive answer to this question can be given. Our statistical information on the Soviet economy is not so detailed, nor are the magnitudes of the commodities involved so large, as to warrant great confidence in the results. But a few observations may be made. The Seven Year Plan announced last month sketches out the direction of growth of the national economy over the period 1959-65. If one examines it for indications of the role of credits and trade with the underdeveloped countries, one finds very few. The plan does contain a target figure for 1965 trade with the other Communist countries, but not for trade with non-Communist countries. This in itself is significant: the old predisposition for autarky has been somewhat relaxed in recent years, but not to the extent of permitting the kind of dependence on non-Communist countries that would be required by a full commitment to trade according to comparative advantage.

Looking further, cotton and wool are two raw materials that loom large in Soviet imports from the Middle East and some countries of Asia. Does the plan indicate that Soviet industry is being geared to a

greater dependence on imported cotton and wool? In fact, the Seven Year Plan provides for a more-or-less *pari passu* growth of fiber and textile production. Cotton textile production is to increase 38-43 per cent, while raw cotton production is to increase 35-45 per cent. Wool textiles are to increase 77 per cent, while raw wool is to increase about 70 per cent. The planners show no intention of letting their textile industry become dependent on imports of wool and cotton.

Thus, consideration of the USSR's comparative advantage does suggest that the credit and trade program probably involves no great net loss and perhaps brings some net economic gains. But there is little to suggest that economic gains are an important motive underlying the new policy. The economic competition we are talking about is clearly not that of two powers competing for the rice of Burma or the jute of India. It is a political competition waged with the new weapon of economic aid.

DISCUSSION

RAYMOND P. POWELL: Mr. Seton's paper is a remarkably imaginative effort to extract usable inferences from sparse and faulty data. If his conclusions can be regarded as reliable, even for rough orders of magnitude and directions of change, they are obviously significant. The question to be asked, therefore, is how much reliance can be placed on his findings. Since Seton is clearly aware of the limitations of his findings, it may be ungenerous to object to the modest claims he makes for them. It seems to me, nevertheless, that no claim of reliability is in fact justified.

There is, first, a serious question of the meaning of functions obtained by the statistical techniques used here. This is a question outside the center of concern of this session and one on which I am not well equipped to voice an independent judgment. But criticisms of Cobb-Douglas functions fitted to cross-section data, raised by Reder, Bronfenbrenner, and Marschak and Andrews, in the early forties, and, more recently, by E. H. Phelps Brown, appear too damaging for such functions to be treated as generally accepted tools of the trade. Since Seton does not explain the reasoning on which his choice of methods rests, it remains doubtful that empirical functions of the sort he has computed resemble at all closely the analytical functions they are meant to represent.

The principal difficulty can be stated briefly. What Seton has measured is the differences in output which are associated with differences in (or differences in changes in) capital and labor inputs as among industries or areas. By analogy with what Reder called "interfirm" functions, these could be called "interindustry" or "interregional" functions. They tell us, for example, how output per unit of input varies as we move from industries of low capital/labor ratios to industries of high capital/labor ratios, or from industries of small to large scale. They represent a scatter of realized points on a number of different production functions, not of alternative potential points on a single production function. They do not tell us how output would change were we to increase capital or labor inputs in some single industry or in all industries together; which is to say, they do not tell us what the analytical production function is intended to tell us. This is not a fault of the data but an inherent flaw in the estimating procedure. Unless we are prepared to assume that all industries or all regions have identical production functions, which appears totally implausible, there is no reason to expect either an interindustry or an interregional function to correspond to the analytical function, or, for that matter, to expect the first two to correspond to one another.

My second objection is alternative to the first, or, perhaps, bears on the reliability of Seton's computed functions regarded simply as interindustry functions. The observations available for his prewar computations are very oddly distributed, especially in view of the purposes for which the results are intended. In the period from 1928 to 1934, according to the official data, the so-called "metal-working industries," principally machine building, accounted for 26 per cent of the increase of capital and 35 per cent of the increase of labor in large-scale industry as a whole; the food and textile industries com-

bined accounted for 13 per cent and 15 per cent of the respective increases. Yet in the calculations for Table 1, the metal-working industries enter as 1 or possibly 2 out of 60 observations, the food and textile industries as about 23. While Seton here calculates a separate function for producer goods industries, metal working remains 1 or 2 of 24 observations, 11 of which, incidentally, are essentially extractive industries. In Table 2, Version A, metal working is again 1 or 2 of 35 observations, some 13 of which are for food and textiles. In Table 5, for the 1928-34 calculation, metal working evidently drops out altogether. Much the same distribution of observations necessarily occurs with the Hodgman data. In general, the data from which the prewar functions are computed look on examination to relate very disproportionately to the traditional light and extractive industries which accounted for the bulk of output in 1928. They relate very little to the new processing industries which accounted for much of Soviet growth after 1928 and, consequently, very little to precisely those industries in which technology is likely to have changed most.

Just how this distribution of observations would affect the kind of function computed here is not easy to say, but that it should result in a function which was in any sense representative of actual structural relations in the Soviet economy of the early thirties seems highly improbable. The difficulty would again disappear if all production functions were identical, but that assumption becomes still less tenable when we are restricted perforce to observations drawn predominantly from the laggard sectors of the economy. If production functions are not identical, Seton's prewar functions have much the same character as a consumption function fitted to cross-section data drawn largely from households of the aged and infirm. His postwar functions do include the rapidly developing sectors and presumably are strongly affected by them, but the difference in his results for the two periods could as well be explained by differences in the estimating procedures or by different distortions in the data as by this difference in coverage.

There is, finally, the obvious question of the reliability of the basic data. Seton thinks they are not very reliable but good enough to support his more general conclusions. I am less confident. Though the difficulties are not limited to the capital stock series, they are, as Seton points out, especially large there.

The capital stock data, as noted, are exclusive of inventories; they are for undepreciated assets; and, perhaps unavoidably, they are unadjusted for intensity of use. Part of Seton's computations employ official series purportedly valued in constant prices (the capital series in Table 3, through 1935, is an official series valued in 1933 prices, though it is here cited from Berliner). The objection to these data is less that they are known to be faulty than that their reliability is untested. Certainly they are not the kind of Soviet statistics to be taken on faith, and the intrinsic difficulty of measuring capital in constant prices, together with experience with Soviet investment series, argues strongly against assuming them reliable. Part of the computations employ Soviet current-value data, somehow deflated. In Table 2, capital prices are taken to have risen by less than 5 per cent from 1928 to 1934; over this period construction accounted for roughly 60 per cent of industrial

investment and construction costs and prices rose by something like 75 per cent; changes in equipment prices were too varied to be easily summarized. In Table 3, the capital index for 1936 through 1940 is computed from data not consistently valued in current prices, deflated by an index of prices of things which are not in fact investment components. As for the recomputations with electricity inputs, it is hard to find much reassurance in the fact that two highly unreliable measures of capital yield results which are partly consistent and partly quite inconsistent with one another. They suggest rather that we might well get still different results if we had reasonably accurate data.

It may be worth pointing out, by way of conclusion, that, while it is unquestionably important to establish how the Soviets developed as rapidly as they did, we are still a long way from having established the simple facts of that development—the behavior over time of outputs and inputs in total and by sectors. If by some short cut we can discover how it happened before we know what happened, this will be an impressive and welcome feat, but it is not an easy one to accomplish.

FRANCIS SETON: Insofar as Mr. Powell merely repeats my own reservations I have no cause for dissent. But when he takes his stand on recent general criticism of cross-section fits, it should be pointed out that this has chiefly been directed against the correlation of input and output levels, particularly where these are dominated by irrelevant size variations arising from the accidents of classification (E. H. Phelps Brown). My own findings, however, are based on the correlation of growth rates, and accordingly the relevance of the criticism would still need to be tested. So, incidentally, would the extent to which it invalidates the production function as a conspectus of observed behavior rather than a "technological law." As such it may indeed be little more than a concise summary of what Mr. Powell has referred to as variations in "output per unit input . . . as we move from [industries of] low capital/labor ratios to [industries of] high capital/labor ratios or from [industries of] small to large scale." (The brackets are my own.) But surely, as long as we believe that capital/labor ratios and scale of production are the dominant influences on productivity, the fact that their conjoint variation can only be observed by going from industry to industry (or area to area) need not destroy our confidence in the result. It still remains useful to know what these variations are and how they have been affected by the passage of time in different countries and different periods. Such knowledge aids conjecture about the future, even though it might have to be based on induction and analogy rather than strictly deductive logic.

Finally, the charges against my use of the Soviet material seem to me pressed too far: The 5 per cent deflation of capital values which Mr. Powell accuses me of contriving for the six-year period 1928-34 is in fact applied to the annual growth rate during that period. It is not a guess but an estimate from original sources which has been widely accepted by Mr. Powell's own colleagues at RAND. Furthermore, the inevitable lack of breakdown of engineering industries, where technical progress may have been faster, is balanced

by a similar treatment of metal-working industries and repair shops, where it was probably slower. With all the uncertainty attaching to such estimates, there seem to be few grounds for a presumption of bias one way or the other. Mr. Powell's "aged and infirm" are in fact the straplings which Soviet statisticians habitually put on show, and we can do little better than include in our sample all that is available.

I have myself characterized the paper as a tentative foray, and certainly do not wish to be driven into pressing more substantial claims than have been staked out in its first paragraph. If I have nonetheless accepted the opportunity to take issue with my discussant, it is only because his comment, for all its fair-mindedness and courtesy, has about it an air of finality which seems out of keeping with the present state of the subject and which, if unchallenged, might easily pass for substance.

ROBERT LORING ALLEN: Professor Berliner has delivered such a thoughtful and well-balanced paper—based upon his recent book, *Soviet Economic Aid* (Praeger, 1958), which is by far the authoritative work on the subject—that I can only agree with his appraisal. My discussion will, therefore, attempt to amplify his remarks, particularly with respect to Soviet assistance to economic development in Asia, Africa, and Latin America.

The USSR has not contributed and is not currently contributing significantly to the economic development of the underdeveloped countries of free Asia, Africa, and Latin America. As Professor Berliner says, the USSR is engaged in a political competition and is exploiting trade and economic assistance as an aspect of propaganda and psychological warfare. These contentions are borne out by Soviet behavior in these areas and by trade statistics published in *Vneshniaia Torgovlia*, 1958.

In 1955 the USSR exported 2,707 million dollars to the "socialist" countries, 574 million to developed countries, and 95 million to thirteen of the underdeveloped countries of Asia, Africa, and Latin America. In 1956 exports to the socialist countries declined slightly, increased to developed countries by 19 per cent, and to underdeveloped countries increased to 157 million dollars. In 1957 the USSR exported 3,232 million dollars to socialist countries, 787 million to developed countries, and 258 million to eighteen underdeveloped countries. Thus, overwhelmingly, Soviet exports go to its own bloc and to developed countries and the share going to underdeveloped countries still is only about 6 per cent of Soviet exports.

Soviet exports were about 2.5 per cent of the imports of the underdeveloped countries to whom the USSR exported in 1957. Only in Afghanistan, Egypt, and Iran does such trade assume economic significance. The largest importer of Soviet goods, India, obtained less than 4 per cent of its imports from the USSR in 1957. It is to be noted, however, that a large proportion of trade is not always necessary for political influence. Finland with less than 20 per cent of its trade with the USSR is in serious economic difficulties because of Soviet punitive action.

Machinery and equipment exports indicate clearly the extent of Soviet interest in development of underdeveloped countries. In 1955 of the 597 million dollars exported, socialist countries received 578 million. In 1956 these

countries received 94 per cent and in 1957 82 per cent. Even so, from the same area the USSR imported more machinery and equipment, having an import surplus of 439 million dollars between 1955 and 1957. Soviet machinery and equipment exports to the undeveloped countries were 5 million dollars in 1955, 24 million in 1956, and 87 million in 1957, representing 5, 15, and 34 per cent of Soviet exports to these countries. As a proportion of total Soviet exports, these amounts were less than 1 per cent in 1955 and 1956 and only 2 per cent in 1957.

In 1955 Argentina received 20 per cent of Soviet machinery and equipment exports to underdeveloped countries. India received 6 per cent. Iran and Turkey together received 12 per cent. None had received any Soviet credit. Afghanistan received 56 per cent of Soviet exports. In 1956 Burma, Egypt, Iran, and Turkey, all without Soviet credit, received 37 per cent of Soviet exports. India imported 30 per cent of Soviet machinery and equipment exports. In 1957 India was the chief recipient, receiving 47 million dollars or 55 per cent of Soviet exports. Egypt was second and Afghanistan third. For the countries to whom the USSR has granted credit, machinery and equipment exports in 1955 were less than 3 million dollars, in 1956 about 17 million, and in 1957 about 71 million. This implies, if Professor Berliner's utilization rates are correct, that in 1955 and 1956 about two-thirds of deliveries on credit were not machinery and equipment and in 1957 about one-half consisted of such items.

Since the USSR has presumably moved into a creditor position, one would expect that its exports to underdeveloped countries could exceed its imports as these countries took advantage of the grace period and payments spread out over a period of time. This happened in some instances, as in India, but for all underdeveloped countries just the reverse happened. In 1955 the USSR imported 92 million dollars more than it exported, just slightly less than its exports that year. In 1956 imports were 112 million dollars more than exports and in 1957 imports exceeded exports by 139 million. Some of the amounts were paid in transferable currencies, as in the case of Cuban sugar. Many countries, however, are tied to the USSR by trade and payments agreements which specify bilateral balancing of trade (except for Soviet credit) and payment by adjustments in the volume of trade. Hence, some of the export surplus of underdeveloped countries is short-term credit granted unwittingly by them to the USSR. Argentina felt this acutely when in early 1958 a delegation, hat in hand, toured the USSR and Eastern Europe to try to buy enough goods to settle accounts.

While the USSR has acted as a responsible commercial trader in some cases (as in India, for example), the last few years are replete with examples of Soviet shortcomings. The most voluble criticisms concern accumulation of nontransferable debit balances, high-priced exports, poor quality and limited selection of goods, re-exportation of products from primary producers, delay or failure to deliver on export commitments, and the upsetting of commodity markets, as in the case of tin.

What do these facts and figures mean? They mean simply that up to the present time the USSR is not seriously engaged in assisting in the economic development of underdeveloped countries. While trade has increased and

there has been some utilization of credit, Soviet efforts have not reached the level at which it can be said that the USSR is having a significant economic impact on underdeveloped countries. There are considerable Soviet commitments and an expressed desire for increased trade, but at this moment, the promises remain merely promises.

The USSR has the capability to honor its commitments and to assist the select few—India, Afghanistan, Egypt and Syria, Yugoslavia, and perhaps others—measurably in their development. It is also probable that there are trends in the relative cost structure of the Soviet economy which enhance its capability to trade with underdeveloped countries. But the question is less one of capability than it is one of intent. The nature of Soviet efforts, selection of recipients, terms of transactions, and performance to date suggest that the USSR seeks political objectives and will offer and deliver trade and credit only to the extent that these objectives are or potentially can be attained by these means.

The past three years have demonstrated that great quantities of resources are not required to achieve these ends. Promises, with only just enough deliveries to avoid the stigma of doing nothing, have been adequate if accompanied by the proper amount of publicity and skill in execution. In view of the small Soviet effort and spotty performance, one may wonder why it has apparently been so successful. Part of the answer lies in propaganda and psychological warfare. Part of the answer lies in the novelty of what the USSR purports to be doing. Most important, however, the USSR has the wind at its back, in the form of propitious world economic and political conditions. The rise of new states and intense nationalism, the propensity for "planning," anti-colonialism, economic and political frictions within the free world, the economic problems of primary producers, the desperate sense of urgency for development felt by underdeveloped countries, and their desire to occupy the catbird seat by playing world powers off against one another can and have all been harnessed to make Soviet assistance and trade appear to be something they are not: a significant contribution to economic development.

Perhaps in the future Soviet assistance and trade will become economically more significant. Increasingly the USSR will be pressed to make good on its commitments and it is probable that many of the promises will be honored. Soviet trade will grow and performance will undoubtedly improve. But it will not depart from fundamental Soviet political goals and will not be designed to assist in economic development. The competition will intensify and the issue is in doubt, not on economic grounds, but on cultural, social, and psychological grounds. Perhaps it is time for economists to call in communications experts, sociologists, propagandists, and psychologists to understand better Soviet economic moves and their impact and to help devise policies which will put the West's best foot forward.

CHAUNCY D. HARRIS: Lazar Volin has called attention to certain key policies in the recent Soviet attempts to expand agricultural production: increasing the size of farms and of the proportion of cultivated land in state farms,

transfer of machinery from machine-tractor stations to collective farms, decentralization of agricultural planning, increase in economic incentives with consequent sharp rise in farm income, simplification of the structure of prices paid for farm produce, flow of labor back into farm production, rise of capital investments in agriculture, and expansion of cultivated acreage in the virgin and idle land program. On each of these topics he has made what seem to me sound and appropriate comments, expressing doubts on the effectiveness of some programs such as that to increase farm size, noting the achievements, limitations, and comparative costs of others, such as the virgin and idle lands program, and the possibilities of yet others such as the rise of capital investments, farm prices, and farm labor, and the decentralization of decisions. I find myself in agreement with his general conclusion that with further improvement in the institutional structure and the socioeconomic environment Soviet agricultural production should continue to increase but that achievement of the projected goals seems unlikely. Judging from failure to achieve past goals in agriculture, I sometimes wonder if these goals are intended not as expected increases but rather as unrealistically high goals that are expected to stimulate greater effort than would realizable goals.

What I miss in this paper is a degree of quantitative precision. How much increase in production has there actually been? What proportion of such increase may be accounted for by increased capital investment, improved technology, better management, increased area under cultivation, higher prices, increase of labor supply, and such factors? Data for the building of the answers to such questions have been so meager that it would be unreasonable to expect Dr. Volin to provide such answers. Yet one may hope that as data become available he will tackle such problems. It would be interesting, also, to compare the growth patterns in Soviet and American agriculture.

SOVIET ECONOMIC PLANNING

INDUSTRIAL PRICES IN THE USSR[1]

By GREGORY GROSSMAN
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This brief paper inquires into the role of prices in the Soviet economy during the plan era, especially from the administrative and financial reforms of 1929-34 to the reorganization of industry and construction in 1957. My time is short, and I limit the scope of my attention equally severely. I am here concerned primarily with prices at the enterprise level, as contrasted with the planning level, and with only one of the four transaction areas of the Soviet economy; namely, that in which state entities deal with each other.

I

The transaction areas of the Soviet economy are defined by the four possible ways of pairing the two main categories of transactor—the state enterprise (or other state agency) and the household (in its capacity of petty private producer as well as consumer)—each of whom can be a buyer or a seller. Co-operative enterprises are assimilated into one or the other of the two categories as convenience dictates. The outside world is here ignored.

In our transaction area, which can also be spoken of as the state sector, the prices are chiefly those of intermediate and final products of industry, on which I shall concentrate here for the sake of simplicity, of the products of construction and transportation and of such primary factors of production as the state owns outright (land, mineral resources, investible capital, etc.).

But first I comment briefly on prices in the other three areas: (1) Since households deal with each other in an essentially free market (chiefly the so-called *kolkhoz* market, but also private leasing of dwelling space, "speculation," and so forth), prices in this area are defined by the simple interaction of supply and demand. Needless to say, because of its overwhelming role in the economy the state of course does influence these prices indirectly, whether incidentally or intentionally. (2) Prices charged by the state to households, primarily in the sale of consumers' goods to them, are so set—speaking generally but not very precisely—that the total value of sales will approximate the total disposable household income during the period and the retail price of an individual good roughly equates expected demand

[1] This and all other footnotes appear at the end of this paper.

and planned supply, for the whole country or a large zone of it. The chief financial instrument used to attain the aggregate and partial equilibria is the turnover tax. In normal times, formal rationing is avoided, except for housing space. This is not to say that the equilibria are usually achieved; prices probably tend to err on the low side for this. (3) Prices paid by the state to households are primarily for labor and for agricultural produce. Wages, based on complicated centrally-determined formulas, are roughly such as to deploy labor according to the needs of the production plan. This is not to overlook administrative direction, limitation of mobility, and coercion, applied to nearly all labor between 1940 and 1956 (or, effectively, 1951) and in varying measure to certain categories of labor throughout. The structure of prices paid for agricultural produce has been complicated in the extreme, especially prior to their reform of June, 1958. On the whole, these prices have been—and continue to be after the reform as well—so low as to be coupled with compulsory delivery quotas.

II

To return to the state sector, let us, perhaps at the risk of reciting the familiar, remind ourselves of some of the conditions that obtain in it.

There is of course state ownership of the means of production, and a hierarchical structure that administers this sector of the economy.

There is concentration of politico-economic power and authority at the center. Taken together, the central authorities[2] possess a common and strongly held set of goals and values and a will that they attempt to impose on the managers and other economic agents subordinated to them.

The goals and values of the latter, however, correspond only in part, in content and in ranking, to those of the central authorities. Thus there is a problem of enforcing compliance with the will of the central authorities—of what the Russians call "control"—a term that denotes a combination of supervision, surveillance, checking, and administrative prophylaxis.

The directing and co-ordinating principle is that of planning, which comprises the following main activities among others: specifying the direction of economic development (formulated in the prospective, i.e., multi-year, plans, and particularly in their investment and training programs; finding rational ways of utilizing the available resources, in the long run and in the short; specifying (chiefly in the one-year plans) the bill of goods to be produced; and assuring balance in the sense of compatibility between requirements and availabilities. The planning function is closely associated with, but is to be distinguished from:

The issuance of commands to enterprises (and their parent organizations) on the basis of which most production and much of the distribution take place. We may speak of the Soviet economy as a "command economy." (To my knowledge, the phrase "command economy" was first used in English by George N. Halm in his textbook, *Economic Systems*, 1951, page 310.) With regard to production, the commands lay down in varying degrees of detail minima for output (quantity, value, quality, assortment, timing) and maxima for input use. Commands flow down the economic-administrative hierarchy; information flows up the hierarchy. The information is essential for watching the progress of the current plan and initiating possible remedial measures, for drawing up plans for future periods, and for evaluating the performance of the managers. Responsibility for performance is attached to each assignment. There is continuous control over managers to ensure their compliance with the commands and regulations to which they are subject.

The plans and the commands are so drawn up as to fully commit, and even overcommit, the resources of the whole economy and of each enterprise. For this reason, as well as for others:

There is a persistent sellers' market,[8] by which I mean a condition wherein it takes generally more effort to buy (procure) than to sell. A result of this is dominance of the seller over the buyer in an actual or potential transaction, a fact that is of some importance in interpreting Soviet prices.

And of course, there is money, though as we shall see not all prices are expressed in money, or in the money that is the medium of exchange.

I have said enough to suggest that we may expect prices in this area of the Soviet economy to be called upon to perform a number of functions, some of which are not usually considered in Western value theory. In conjunction with the appropriate behavioral principles, prices in our area of the Soviet economy, as in a market economy, have the role of discouraging technological waste and of guiding the production and (productive) consumption of goods. One should note in this connection that the planners have much wider latitude of choice than do the managers, and that consequently the prices relevant to the former have much more of an allocative role to perform than the prices relevant to the latter. Further, Soviet prices have the most important function of facilitating control over the activities of managers (and other subordinates of the central authorities) in order to enhance compliance with the numerous commands and regulations and to ensure the conservation of state-owned material wealth, and, as a corollary, they also have the function of assessing managerial performance.

This double function of Soviet prices—and especially the evaluative aspect—is closely analogous to the function of intracompany prices in vertically extended companies in our own economy. Planning is a complicated and arduous process, and therefore Soviet prices must also in some measure respond to the necessity of simplifying its mechanics. The central setting of prices is in itself a drawn-out and laborious task, and even with all the will and competence in the world to produce a "correct" system of prices, there is a considerable cost involved in doing so. The Soviet price structure has been the poorer for having to reflect this cost. As anywhere else, prices in the Soviet economy perform the role of financing nonconsumption. And lastly, although their income-distributive function is much smaller than in private enterprise economies, their important success—and power-distributive functions—should not be overlooked.

The actual structure of Soviet prices in our area is of necessity a compromise between the many and often conflicting purposes that they are called upon to serve, the various interests affected, and the political forces involved.[4] Like any compromise—and especially a political one—it is complicated and untidy and can be expected to fail the test of rationality, at least of a rationality tied to a single desideratum. This is not to absolve Soviet price-setting from the charges of crudity and incompetence that have been leveled at it both at home and abroad.[5]

III

It is therefore hardly surprising that those of us who have been brought up on the logical and aesthetic qualities of the Walrasian and Marshallian price systems of our textbooks—I am leaving our capitalist reality aside—are easily struck by such characteristics of Soviet prices as multiplicity, asymmetry, compartmentalization, and discreteness. To illustrate multiplicity, let me list the main classes of price in our transaction area (that is, omitting the complex structure of prices in agriculture and in retail trade), thinking now of price in the general sense of terms on which alternatives are offered:

1. Transfer prices (at various times designated in Russian as *otpusknye, optovo-otpusknye,* and *optovye tseny*), at which goods actually change hands within the state sector. These can be net or gross of turnover tax. A variant of the transfer price is the so-called "settlement price" (*raschetnaia tsena*), differentiated as between firms, at which in some industries the marketing organization buys the article for resale to the user at the transfer price.

2. Index (constant, unchangeable) prices used for aggregating planned or actual output of the enterprise, of groups of enterprises, of branches of industry, and of industry as a whole. At some historical

point the index prices may be identical with the transfer prices but tend to diverge from them, in level and internal structure, as the two evolve separately (though the index prices are of course supposed to remain constant, allowing for the introduction of prices for new commodities at the appropriate level, until replaced by a new set of index prices).

3. What may be called "quasi-prices"; that is, money amounts per unit of commodity that do not have the usual outward form of price but nonetheless represent terms on which alternatives are offered to the enterprise. An example of a quasi-price is the bonus paid to management or a worker for saving a physical unit of a particular input or for increasing the output of a commodity by a physical unit.

4. What may be called "physical quasi-prices"; that is, the terms of exchange between two commodities at which substitution of one input for another, or transformation of one product into another, does not affect the physical indicator(s) of performance. Example: If the physical unit specified in the plan for, say, cloth is a linear meter, then a meter of one kind of cloth is equivalent to a meter of any other kind for purposes of meeting the production plan in physical terms.

5. Estimate prices (*smetnye tseny*) at which construction cost estimates are prepared, though not necessarily at which finished products of construction are transferred from builder to customer. Estimate prices may also serve as a sort of index price for the construction sector.

6. Planning prices; that is, prices at which calculations in the course of planning and project making (engineering design) are performed. These may be identical with some of the above-listed classes, or may differ by the application of "coefficients of deficitness" to the transfer prices of certain goods, or by elimination of the turnover tax where the transfer price includes it.

7. Price surrogates, where the use of prices in the conventional form is doctrinally repugnant. The best known of these are the minimum admissible recoupment (pay-off, pay-out) periods for additional investment in choosing between alternative technological variants of unequal capital intensity.

Besides, there are multiple prices within these classes; thus, transfer prices may vary at the same time and in the same place according to the type of producer (seller) and the type of buyer.

Asymmetry is indicated in that the class(es) of prices guiding the combination of inputs may not be the class(es) of pricing guiding output in the same enterprise, or the class(es) of prices guiding the producer's output need not be those which steer his customers in the use of the commodity. The price structure is compartmentalized in the sense that the attempts, if any, that are made to bring price ratios

into approximate correspondence with marginal, or even average, rates of substitution, are limited to close substitutes, such as alternative sources of energy or nonferrous metals. And discreteness manifests itself in the large and abrupt changes over time and space.

IV

To draw attention to these characteristics is not to call the Soviet pot black. This would be unwise, not so much because our own kettle of actual prices is far from lustrous, but chiefly because the price system of our textbooks is not addressed to the problems of a command economy. In the extreme case of an absolute command economy —that is, a situation in which the product-mix, the input-mix, and all the technical coefficients are fully, consistently, and minutely prescribed from above and in which there consequently is no substitutive choice by managers to exercise—and of perfect compliance by managers, there would be no need for any prices at the operating level.[6] Commands flowing down and information flowing up could be entirely in physical terms, and because all managers are perfect by definition there is no need to evaluate their performance. If not realistic, the situation is at least conceivable.

While still disregarding choice on the enterprise level, let us take a step in the direction of reality by assuming that compliance by managers is imperfect. There is now need to control the firms' actions and to evaluate the performance of managers. This could be done by physical audits, but only laboriously and inconclusively for lack of common denominator for physical quantities. Hence the desirability of having prices—transfer prices or merely index prices—to aggregate outputs and inputs, and to compute unit costs. Further, to increase the alertness and sensitivity of control, it is desirable to keep enterprises on the brink of insolvency by planning their receipts to exceed their expenses by only a narrow margin; i.e., to exercise control by means of the budget constraint. Hence not only index prices but also transfer prices, and not only prices but also money and financial institutions. This adds up to the Soviet *khozraschet* ("business calculation") system. My point is that the control and evaluative functions of money and prices alone are sufficient to explain the need for *khorzraschet*. Delegation of some choice to the enterprise provides an additional but not a necessary reason for it. Note that in Russian parlance the *khozraschet* of the plan era is contrasted with *kommercheskii raschet* ("commercial calculation") which obtained during the NEP when the state-owned enterprises did have a good deal of choice with regard to outputs and inputs, and in some vague way were even expected to maximize profits.

A quick look at the early days of *khozraschet* may be instructive.

As I read it, the literature over the half-decade between Stalin's famous speech of June 23, 1931, and the (transfer) price reform of April, 1936, showed more concern with technological efficiency and managerial compliance than with ensuring the right choice by the enterprise. This is not very surprising as we recall the circumstances of those years: rapid introduction of new technologies, cocksureness by the central planners, a strong technocratic tinge, extension of physical norms and targets, and inexperienced or otherwise imperfectly reliable managers. In the speech, Stalin virtually identified *khozraschet* with the extirpation of *beskhoziaistvennost'* ("managementlessness"; i.e., avoidable waste), and, not surprisingly, the ensuing literature echoed him in this. Waste was to be avoided by attention to cost, but also, and more so, by manipulating physical "norms" and by controlling the allocation of producers' goods. Insofar as anything like a financial mechanism was invoked, it was largely the operation of the budget constraint; i.e., pricing the material in short supply out of wasteful use. If Soviet law (according to Harold Berman) has had a "parental" function, to ingrain habits while circumscribing action, so apparently has had *khozraschet*, especially in the early days of the plan era when economical habits were sorely lacking. Of course, as we know, certain parallel developments, such as those in the monetary and banking spheres, rendered the budget constraint highly elastic.

To illustrate that considerations other than allocative efficiency largely guided the thinking of price-planners, especially in the early years, we may refer to such an obvious principle as the differentiation of prices according to quality. It is interesting that Turetskii—a leading Soviet authority in this field—writing in 1932, subscribed to this principle specifically for reasons of facilitating control over and evaluation of management: poor quality of producers' goods should be reflected in the accounts of the producing and not of the consuming enterprise, so that responsibility can be readily ascertained. More generally, he favored invariable adherence to contract prices in transactions between enterprises to eliminate "the possibility of one enterprise taking advantage of the managerial [*khoziaistvennye*] attainments of another or the shifting onto the former of the managerial shortcomings of the latter."[7]

The logic of control over more or less decentralized units within heirarchical organizations reaches into quite different milieus: twenty-five years later an American authority on management accounting wrote, in almost the same words, that pricing for intracompany transfers should aim to avoid the situation where "production inefficiencies and efficiencies in plants [at the earlier stage of manufacture] would be passed on to the division [at the later state]," in which case "the

profits of the latter would be determined in part by the performance in plants which are under another division's control."[8]

V

What we recognize today as the cardinal, though far from inviolable, Soviet principle of price formation in the state sector, namely, that the price (net of turnover tax) be equal to the anticipated industry-wide (or zone-wide) average cost of the good plus a small margin of profit, seems to have developed spontaneously during the early years of the plan era. The mystique of the law of value came considerably later, in the early forties.[9] It is not hard to see that in a thorough command economy, but with imperfect compliance by managers, such a conception of price has considerable merit from the point of view of the central authorities. First, the image of a price that is built up from cost elements—we may call it the "genetic" conception—corresponds to the main function of management under the postulated conditions, which is the building up of finished output from components (inputs) allotted to it for the task. Price is at once the weighted average cost for the industry (or zone) and the standard against which the individual plant's costs are measured. In accordance with the same conception, as Campbell has recently shown,[10] intrafirm accounting concerns itself primarily with providing average cost information to the enterprise's superiors and to the various control organs rather than with furnishing management with data for internal decisions. In other words, pricing and accounting have as a major purpose the exercising of control over and the evaluation of enterprise management. In this light, some of the seeming irrationalities of Soviet costing and pricing become more understandable. For example, an interest charge on fixed capital does not usually enter cost according to Soviet practice. This is irrational for allocative but not for control and evaluative reasons, because investible resources as such (contrasted with capital goods of which interest is not the price) are not among the inputs that are entrusted to the manager to be assembled into output. That the manager may hoard material wealth if he is freed from paying interest is a real problem, but it is a separate control problem (or at least has been so seen by the authorities).

Second, there is great convenience to the planners in this approach, both for price planning and for cost planning at later stages of production. *Ex post* unit costs of production are reported by enterprises; they can be converted into *ex ante* with the aid of some engineering data and by the mechanical application of what Berliner has called the "ratchet principle." Demand schedules are not in question. (Now there is talk of using matrices and electronic computers to solve

simultaneously for the whole gamut of transfer prices.) What at first glance seems like a disadvantage—the need to define the scope of "industry," "zone," and "commodity"—is in fact an advantage because the economy is already partitioned this way for administrative and reporting purposes, and the existing organizational structure can therefore be utilized for both price computations and the control activities related to price. Lastly, uniform country-wide prices of producer goods are obviously of great convenience in planning costs at later stages of production.

A serious problem arises where average cost varies greatly from enterprise to enterprise, as in extractive industries or in industries containing plants of varying technological modernity. In the absence of rent and interest charges, in such cases price that is set at average industry-wide cost leads to large profits in some enterprises and to losses in others and it can be particularly deceptive as a basis for planning decisions. The Soviets have tried to solve this problem, not always successfully, by setting regional transfer prices, by paying subsidies out of the treasury, by special settlement prices (see above), and in other ways.

VI

Transfer price that is based on industry-wide average cost has also, in the eyes of Soviet theorists, the virtue of objectivity. It is not entirely clear what they mean by this, or that they all mean the same thing. At the least they seem to mean that the price represents a standard of value independent of the costs of an individual enterprise and against which these costs can be measured; that it is a useful yardstick for control and evaluation we have already seen. The vices of cost-plus pricing with reference to a single enterprise are at least as well recognized in the USSR as in this country. Yet objectivity that rests on a statistical basis alone is a frail reed on which to hang the price structure. It is manipulable as all statistically derived magnitudes are. It can be circumvented by redesigning, or merely redesignating, the product. And it has no doctrinal justification, or had none until, in reversal of the previous position, the Marxian law of value was declared to operate in the Soviet Union.

There is no space here to sketch out the evolution of the tenet that the law of value operates in the Soviet economy, or to attempt an adequate inquiry into its significance. The last would in any case be a painful task, for it is doubtful that an unambiguous meaning is to be distilled from the voluminous Soviet literature on the subject. The tenet is a curious one, not only because, as has been often observed, it introduces into a state-owned economy a category that Marx ap-

parently did not regard applicable under socialist conditions,[11] but also because it does so on the shaky ground that since the state's relations with the peasants and the consumers are "commodity relations" all the trappings of "commodity production"—money, value, prices—must permeate the whole economy. This is surely one of very few instances where Soviet ideologists in effect assert that the private tail of the economy wags the socialist dog. Be that as it may, the law of value imparts the ultimate objectivity of historical necessity to price policy, elevates industry-wide average cost to the more exalted rank of "socially necessary production outlays," and thus legitimates in doctrinal terms the genetic approach to price formation. But the actual practice of Soviet price setting does little to sanctify the law, since industry-wide average cost has been apparently generally regarded as only the first bench mark in price formation and substantial deviations from it for various economic reasons have been widespread.[12]

VII

This brings us to the problem of choice, for the economic reasons in question involve attempts to steer decentralized decisions in the directions preferred by the central authorities. Choice by whom? Clearly the planners and project-makers have very much greater scope for choice than do the managers. But to stay with the managers: the Soviet command economy is clearly not an absolute one (in our sense). Some discretion must be exercised at the enterprise level, not necessarily because certain problems are better resolved on the spot (though the Soviet authorities do of course recognize this to a limited extent), but because it is impracticable for the central authorities to prescribe physically every product and input, or to prescribe some of them—indeed usually most of them—in completely disaggregated terms. Hence, we are told by Soviet sources, price policy aims (among other things) at inducing the production of the proper assortment of qualities, grades, and types of products, and steering industrial consumption by discouraging the use of materials in very short supply (in terms of the material balances), as well as by setting the prices of close substitutes in correct relation to each other.[13]

Though this may carry a familiar ring, we should be in error to conclude that the price mechanism is enthroned hereby. With regard to the steering of production, the product-mix in a broad sense—and to a great degree even in detail—is prescribed by physical commands. The mechanism of transfer prices plays the ancillary role of bolstering the assortment plan of the enterprise and of guiding what may be called "intracommodity assortment"; that is, the assortment within the bounds of a commodity as the latter is defined in the enterprise's

plan. (Certain peripheral and on the whole insignificant spots in the state sector are indeed left to the joint operation of the profit incentive and the mechanism of transfer prices.)

While there is much empirical evidence to show that enterprises are guided by the relative profitability of products in fulfilling their assortment plans, the transfer price mechanism would seem to be unreliable in this respect. The degree to which substitution of one assortment for another is transfer-price-elastic depends on the management's outlook with regard to the success indicators expressed in terms of the other prices (gross value of production in index prices, physical volume of output, etc.), and, as we know, the other success indicators tend to outweigh profitability in the minds of Soviet managers.

Formally, there are as many price elasticities of transformation as there are classes of prices pertaining to the output of the enterprise. Because of the nature of managerial incentives, enterprises have tended to be more sensitive to changes in relative index prices and physical quasi-prices (insofar as the latter apply to the product) than to transfer prices. The central authorities have on many occasions altered physical quasi-prices (especially by changing the physical unit of measure specified in the plan) to guide the assortment, grade, and quality of the product. As we know, index prices, though nominally unchangeable, have also been manipulated, upward of course, though in this instance the chief pressure may well have come from the enterprises themselves. Upward revision of index prices may well have been a sort of bribe extracted by management for undertaking the production of new, or allegedly new, commodities and for the introduction of unfamiliar processes. In this regard, index prices may be functionally closer to prices in a market economy than are Soviet transfer prices.

Turning now to the guidance of industrial consumption by means of the transfer price policy, we find an even more complicated picture. The Soviet literature has much to say about setting prices correctly in order to discourage the use of "deficit" commodities and to bring the prices of substitutes into some sort of appropriate mutual relation. Where the substitutes have a common technological dimension, such as the caloric content of alternative sources of energy, this dimension is often invoked.[13] It is not always clear who is to be guided by such adjustments. The opportunities for input substitution in going industrial enterprises are generally limited, not only for technological reasons, but also because of the physical allocation of many materials and the earmarking of expense categories. The sensitivity of managers to prices of inputs cannot be high in view of the structure of incentives. Consequently, one is led to suppose that the policy regarding the prices of substitute materials is directed at least as much at the various inter-

mediate-level and short-run planners as at the managers of enterprises.

The situation is different in construction, which has always been poorly amenable to direction by command due to its more flexible technology, unique conditions at each site, little standardization of finished products, and heavy reliance on local (and therefore usually noncentrally allocated) materials. For this reason, attempts to regulate the input-mix by transfer prices have always been of greater importance in construction than in industry proper. But these attempts have foundered on certain other characteristics of the industry, such as the weakness of financial incentives and poor financial discipline and the absence of a fixed price for the finished product. As a result, construction has combined greater reliance on regulation by price with some of the harshest physical controls, such as outright prohibitions against the use of certain materials (structural steel, roofing iron, etc.), and in this respect perhaps represents a valuable object lesson should there be a significant expansion in the role of the market mechanism in the Soviet economy.

It is interesting to note how Soviet price policy takes advantage of the power-distributive effect of the sellers' market by localizing the exercise of choice with the seller rather than with the buyer where this is practicable. To recall an earlier Russian phrase, the central authorities are "wagering on the strong" when they delegate these decisions by resort to the price mechanism. The classic example is the quoting of transfer prices on a delivered basis that has been lately introduced in a number of industries. This places the demand for transportation services with the seller, who is likely to be less under pressure to be wasteful of them than the buyer. (Of course this may lead to the opposite error, but it is characteristic of Soviet planners to be more concerned with breaking bottlenecks and eradicating major evils, such as unduly long hauls, than with optimization.)

In sum, to the extent that there is a (transfer) price mechanism in our transaction area of the Soviet economy, it is grafted onto the frame of physical planning and commands. Its operation is intentionally compartmentalized and contained by physical and financial devices. In a sense there are many separate price mechanisms inserted into the over-all framework of commands and controls. The mechanisms are not trusted to lead to results consonant with the goals and values of the central authorities; hence they are hemmed in by numerous prohibitions and directives. Nor are they regarded to be sensitive or dependable; hence the violent changes in relative prices (insofar as these are not simply blunders or reversals of blunders) and reliance on the budget constraint as well as on the substitution effect. For these reasons there is lack of confidence on the part of Soviet

authorities and economists in the correctness of actual transfer prices, as manifested by continual checking against price ratios in the capitalist world. Stalin's famous observation that cotton has to be more expensive than grain in the USSR because this is the case on the world market[14] is only the best-known of such instances that can be found in the Soviet literature.

VIII

I have tried to show that there are several classes of price applicable to the Soviet enterprise, and further that, of these, transfer prices, which are the prices at which goods change hands in our transaction area, are called upon to perform a number of functions. For some of these functions—controls, evaluation of managerial performance—the genetic conception of pricing is not entirely illogical, and the more pervasive the command principle of economic organization, the more pressing the need for control (and perhaps for evaluation) and the more justification for the genetic approach to pricing at the enterprise level. If a significant degree of choice is entrusted to management, the imperative of economy-wide efficiency requires marginal productivity (or, more generally, opportunity-cost) pricing of producers' goods and of primary factors of production. For planning and project making, which I have not discussed here, clearly the opportunity-cost approach is called for. Should planning prices be more divorced from transfer prices than they are now? Should transfer prices in any case conform to opportunity costs? If so, how effectively can they perform the control and evaluative functions? But, we must remember, if transfer prices do approximate opportunity costs and the market is given considerable scope, then these functions of Soviet prices would, if not disappear, radically change in character. These are the kinds of questions that the current Soviet debate on price formation, proceeding as it does under the pall of the law of value, has hardly begun to adumbrate, but to which it may eventually have to turn, especially in view of the bothersome experimentation that is progressing west of the Soviet border.

Certainly the present structure of transfer prices for producers' goods does not aim to equate demand and supply on a broad front. An attempt to do so would bring about the threat of an indefinite inflation so long as the present institutional features of the Soviet economy obtain. The pressure of demand on available resources and the resulting sellers' market are due not only to what we might call price control, but also—and more fundamentally—to the system of planning that overcommits resources, the structure of managerial incentives that places quantity above cost, and the subordination of

financial controls to the production program. So long as these features remain, the fear of inflation alone will inhibit a more liberal resort to the price mechanism at the expense of physical controls and commands. More liberal resort to the price mechanism runs into an even more basic dilemma: that of the place of money in a dictatorial society.[18] Money is power, even in the Soviet Union. Its exercise can divert activity away from approved channels and it can in general thwart the will of the central authorities. There is a striking parallel between workers' organizations and money in the Communist world. Both are sources of power that is potentially autonomous of the central authorities: the one enlarges the freedom of maneuver of management, the other of labor. Both exist nominally in the Soviet Union and both are subjected to numerous controls to limit the scope of action. This is especially so of workers' organizations, but the cash balances and the credit facilities of Soviet enterprises are likewise closely watched; their use is often earmarked and restricted in other ways lest they apply their power in undesired directions. It is interesting to note that Yugoslavia—the one Communist country that has radically reformed its institutional structure—has simultaneously given greater autonomy to both the market mechanism, in which money decides, and to workers' councils (although the increase in political freedom was not commensurate, as we know). The role of prices in the Soviet economy cannot be seen apart from the problem of power in the Soviet society.

FOOTNOTES:

[1] The theoretical and empirical literature on Soviet (and Soviet-type) prices is rapidly growing; there is no space here to list even the main works. I should like to acknowledge, however, my intellectual debt to the following recent works which, in various ways, approach the problem from a theoretical angle: K. Paul Hensel, *Einführung in die Theorie der Zentralverwaltungswirtschaft* (Stuttgart, 1954); various recent articles by Peter Wiles; John M. Montias, "Producers' Prices in a Centralized Economy: The Polish Experience" (Columbia Ph.D. dissertation, 1958) and his "Price Setting Problems in the Polish Economy," *J.P.E.*, Dec., 1957; David Granick, "An Organizational Model of Soviet Industrial Planning" (processed, n.d.); Benjamin N. Ward, "The Planners' Choice Variables" (processed, 1958); and Hans Hirsch, *Mengenplanung und Preisplanung in der Sowjetunion* (Tübingen, 1957). The last parallels my approach most closely, but came to my attention too late to be fully taken into account in this paper. It is my pleasure to mention that the present paper is being written while I am on leave under a grant from the SSRC and that it has had the benefit of comments from Andrew G. Frank and Benjamin N. Ward.

[2] The plural is to emphasize that they are neither monolithic in outlook nor perfectly co-ordinated in action.

[3] "Sellers' market" is an awkward term with reference to an economy that is not a market economy, but I defer to usage at the expense of precision.

[4] Conflicts over price fixing rarely come to the surface in the Soviet Union. It is therefore worth quoting the remark of the former Minister of the Construction Industry, USSR, before the 1954 conference on construction: "We have twice raised the question of reducing the prices on mineral building materials, but have not been allowed to do so due to the violent objections of the builders [who themselves produce these materials at much higher costs than the ministry] who expected to suffer great losses therefrom." *Vsesoiusnoe soveshchanie stroitelei . . . 30 noiabria—7 dekabria 1954 g.* (Moscow, 1955), p. 103.

[5] The strongest charges of this nature are to be found in Naum Jasny's two extensive surveys of actual Soviet prices: *The Soviet Price System* (Stanford, 1951) and *Soviet Prices of Producers' Goods* (Stanford, 1952).

[6] Prices in the other three transaction areas are not here in question, of course.

[7] Sh. Turetskii, "Tsena i khozraschet," *Planovoe khoziaistvo,* 1932, 4, pp. 127-28.

[8] I. Wayne Keller, *Management Accounting for Profit Control* (New York, 1957), p. 403.

[9] The acceptance of the law of value into the corpus of Soviet dogma was revealed in "Nekotorye voprosy prepodavaniia politicheskoi ekonomii," *Pod Znamenem Marksizma,* 1943, 7-8, pp. 70 ff. (English translation, this review, Sept., 1944, pp. 519 ff.).

[10] Robert W. Campbell, "Accounting for Cost Control in the Soviet Economy," *Rev. of Econ. and Statis.,* Feb., 1958, pp. 59-67.

[11] A Marxist critique of the Soviet position on the law of value may be found in Ronald L. Meek, *Studies in the Labour Theory of Value* (London, 1956), pp. 256 ff.

[12] This quite apart from extensive and heavy subsidization during periods of cost inflation and relative price stability. Nor am I here concerned with the position of some Soviet economists that the law of value requires inclusion in price of a proportionate share of the "surplus product" in addition to average cost.

[13] Two other "economic reasons" are often given: discouraging excessive use of transport facilities, and, specifically, unduly long hauls, and subsidizing the basic industries, and through them machine-building, in order to accelerate the introduction of new technology. I shall not inquire into these, except to comment that the latter looks very much like *post factum* rationalization of the large subsidies to heavy industry due to the cost-inflation of the early thirties.

[14] *Economic Problems of Socialism in the USSR* (Moscow, 1952), pp. 24 ff.

[15] With regard to the role of money in the Soviet economy, I have profited from the as yet unpublished paper by Donald R. Hodgman, "Soviet Monetary Controls Through the Banking System" (1958), who is not to be held responsible for the formulation herein. The remarks in the text of course do not directly apply to the role of money in the three other transaction areas of the Soviet economy.

THE SOVIET INDUSTRIAL REORGANIZATION OF 1957

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I

The thoroughgoing reorganization of industrial administration and planning carried out in the Soviet Union in 1957 is too large a topic to discuss comprehensively and systematically in the time at my disposal. I will confine myself to a commentary on some selected aspects of these measures, to the neglect of many other aspects at least equally important. Let me also emphasize that I am taking the 1957 measures, so to speak, at their official face value: as an effort to make industry more efficient, and economic policy more effective, by better planning and administration. In other words, I will ignore the political background of the 1957 reforms, important and intriguing as it may be, because my Kremlinological competence is as limited as my time.

To indicate the drift of my argument, I want to submit that the 1957 reform was a radical measure only in an administrative sense. It introduced a concept of direction of industry, an execution of industrial policy, practiced on a very limited scale only in recent Soviet history—a concept officially styled "administration according to the territorial principle." Under this concept, centrally determined (or at least approved) plans and policies are implemented by regional executive agencies, placed in general charge of their region's industry, regardless of branch affiliation. Even though the new administrative regime stops far short of establishing the "territorial principle" fully and purely, it differs sharply from the old system. This was based on the "branch principle" of vertical control of industry, regardless of location, by central agencies which, in name at least, were differentiated by industry branch. The radicalism of the 1957 reform derives mainly from the very substantial modifications which this changing of "principles" has wrought in the administrative environment of Soviet industrial and construction enterprises. At the risk of repeating what others have said before me, I am going to emphasize that "decentralization" is an inaccurate and misleading summary description of these changes.

Its administrative aspects apart, the 1957 reform impresses me not as a radical but as an eminently conservative measure, in the sense that it tries to correct various faults in the operation of industry and its structural and locational patterns, not by amending any of the basic institutions and operating principles of the Soviet economic system, as

it applies to industry, but by organizational and procedural improvements within that system.

II

Let me first explain my contention that the 1957 measures were essentially conservative and why this aspect merits some emphasis. The reorganization followed upon a period, dating roughly from Stalin's death, of sustained and critical public discussion of shortcomings in the planning and direction of industry and their ill effects on industry's performance and its structural, locational, and technological evolution. These discussions indicated profound dissatisfaction with the state and trend of affairs on the part of party and government leaders, industrial executives, and Soviet economists. Dissatisfaction among the leadership was also reflected in the frequent, if nonradical, organizational and jurisdictional reshuffles at the top levels of planning and administration. Some of these moved cautiously in the general direction of the 1957 reform, as the selective transfer of some industries to Union Republic jurisdiction, or the reduction in numbers of commodities subject to centralized planning and allocation. Other changes were reversed in 1957—like the 1955 bifurcation of *Gosplan* into long-term and short-term planning commissions. But they all had a distinctive feature in common with the 1957 reform: They sought to remedy the failings of industry by improving its environment of administration and planning without changing any essential characteristics of the centrally planned and administered "command economy."[1]

In other words, the main remedial actions of the period were confined to only a narrow range of the wide spectrum of remedial possibilities that were being proposed or academically explored. Some of these proposals and explorations were along lines that might have led to modifications of the very operating principles of Soviet industry if given institutional implementation. More specifically, there was an interesting concern with what were, at least, the prerequisites of economic decentralization. Among the men of affairs in industry there were pressures for greater scope for managerial decision making. Among Soviet economists, there was the well-known concern over the lack in their economy of valid criteria and incentives for rational economic choice, and their tendency to question and challenge, however guardedly and obliquely, the doctrinal and institutional constraints that tended to perpetuate these deficiencies. This was primarily an intellectual and academic trend, and there was certainly nothing to suggest that the Soviet Union was headed for some version of "market socialism." Yet, several Western observers—writing before the 1957 reform—had noted

[1] This and all other footnotes appear at the end of this paper.

that various minor policy adjustments of the period and contributions by Soviet leaders to the industrial discussions suggested that the leadership showed signs of being infected with this quest for "rationality."[2]

There were other developments in the Soviet sphere prior to 1957 which seemed to raise at least the glimmer of an intriguing possibility that an industrial reform, when it came, might bring innovations more radical than an overhaul, however drastic, of the organizational structure of the command economy. In Eastern Europe, by 1956, there had been some important departures from extreme economic centralism. In the USSR, even by 1956, Khrushchev had shown himself a bold and far from conservative innovator in his agricultural policies.

My emphasis on the various pre-1957 trends that were the possible portents of more fundamental changes in industry than actually occurred may be merely a confession of my own fallibility. Yet, if anybody else had his expectations heightened by preoccupation with these trends, there may be some point in stressing that none of them found any formal reflection in the 1957 measures.

At least one of them, in fact, suffered a distinct setback. This was the movement for greater "directors' rights," which had been of some interest as a possible portent of a move towards decentralizing economic decision making, by extending the authority of enterprise managers, and freeing them of "petty guardianship" by planners and administrators. The managers' demands had been particularly insistent in 1955,[3] when they actually won some very modest concessions from the government.[4] On the eve of the reform, the Party's Central Committee still expressed an intention to "extend the rights" of (*inter alia*) "enterprises."[5] The theme, however, was conspicuously absent from Khrushchev's reorganization "Theses" of March, 1957.[6] Nonetheless, there was considerable advocacy of greater directors' rights in the public debate of the theses. This was acknowledged by Khrushchev when he was introducing the reorganization law in the Supreme Soviet, but only to observe that "we must give serious thought to this matter so as to make the proper decisions."[7] No decisions appear to have been made to date. Published legislation on the reform is entirely concerned with the administrative environment of enterprises and makes no *de jure* changes in their status.[8] The drastic remodelling of this environment does, of course, introduce a variety of *de facto* changes. It is hard to judge how they affect, on balance, the manager's elbowroom for decision making, but it may well have been restricted and not widened. He has been placed under, possibly, more immediate and intimate supervision by the regional Economic Councils than the more remote ministries and their *glavki* could provide. He may have been subjected to greater influence and interference by regional Party authorities and now lacks recourse to countervailing ministerial authority. More extraneous inter-

ference may result from the emphasis placed on "mass participation" in making the new system effective; e.g., through greater activity of trade union committees, or the counsel tendered by the new "permanent production conferences."

In fact, it would have been illogical to combine the 1957 reform with an extension of managerial authority, since some major benefits expected from the reorganization will only be reaped if the Economic Councils can, and do, interfere rather drastically with the existing enterprise structure and enterprise production programs in their regions. Their main initial assignment is to tidy up an, allegedly, very messy industrial structure inherited from the ministerial era and to reorganize it for more efficient use of regional resources. The Councils are instructed, for instance, to promote vertical integration, where appropriate, by merging enterprises previously severed by departmental barriers, or else they are supposed to promote cleaner specialization of enterprise production programs, by making enterprises stop inefficient subsidiary activities, and rely instead on outside purchase of semimanufactures and components from specialized suppliers who, in their turn, will often have to be newly created out of the existing enterprise structure. At least for this transitional period of the restructuring of industry, then, the reform evidently had to be more concerned with giving the Economic Councils adequate power over enterprises, and their managers, than with giving more power to managers.[9]

Apart from the possibility of infringements of directors' rights originating at the new regional level, managers remain subject to essentially the same constraints from production and other plans prescribed for their enterprises. Soviet comments on the new planning procedures emphasize that plans, from now on, will be initiated by the enterprises themselves. One doubts, however, that this will enable the manager to exert more influence than before on his production program, as, in many branches of industry, his initial proposals are now subject to amendment at about as many stages as under the old system (Economic Council, Republican government and *Gosplan*, Central government and *Gosplan*, not to mention the Party hierarchy). Once his plan has been prescribed, the manager will be under the old pressures to abide by it, plus the new pressure (carried to him via the Economic Council) to be meticulous in living up to his extraregional production and delivery obligations, on which so much stress has been placed since the reform.

In brief, whatever the reform may have done to make the manager's life easier in various ways (as it probably has), it has transferred no powers to him from the planning and administrative bureaucracy and certainly has done nothing to increase his resemblance to the manager of a capitalist firm.

At the same time, the theme of directors' rights seems to have pretty well disappeared from public discussion since May, 1957. Otherwise, however, there has been no silencing of public exploration of additional remedies for the problems of industry. Soviet economists have been warned against the pitfalls of revisionism, but their quest for rationality continues actively. Also, one probably should not read too much conservatism into the lack of action on, say, the economists' counsel (which is divided counsel, anyway) on the need for a more sensible and more operationally influential price system for industry. Whatever the leaders' further intentions may be, they may have had strong pragmatic reasons for not changing too many horses in the midstream of industry's adaptation to its new administrative way of life and of preparing the new long-term plan. In any event, if Soviet agriculture has been the main sinner against rationality,[10] it seems but sensible to have beamed some of the light of reason into the darkest corner first, as Khrushchev has done in 1958, again in quite a nonconservative spirit. One prominent advocate of industrial price reform among Soviet economists, D. Kondrashev, was cheered by the June, 1958, reform of farm prices and marketings into observing that these measures "directly concern agriculture but are relevant to the entire system of price formation in the Soviet economy."[11]

Concessions to the forces of rationality, moreover, need not be cast into formal institutional changes to be important and influential, and Soviet economists would seem to have reason to be cheered by continued signs that some of their arguments are influencing the decision processes of economic policy-makers. Improved criteria of economic choice could be just as beneficial to the quality of planners' decisions in a command economy as they would be essential prerequisites to any extension of managerial decision making. Failure to grant such extension has not stopped the Soviet leadership from relying on some of the tools of rational decision advocated by Soviet economists—for instance, in the important area of investment allocation choices, an area in which some of the crucial decisions of economic policy have had to be made in recent years. Even in 1956 (as R. W. Campbell noted at the time), some of the leaders, including Khrushchev, had justified capital allocation choices in terms of the "pay-off period approach"—an approach which then was allowed only "a sort of *sub rosa* existence" in Soviet economic doctrine.[12] Recently, Khrushchev relied on this approach quite explicitly, and in some detail, to argue the economic merits of thermal-electric over hydroelectric power investment in the present phase of Soviet development (which he did on the awkward occasion of opening the world's biggest hydroelectric plant, thus dedicating it, it seems, as a big monument to irrationality).[13]

Other indications could be cited of an apparently increased aware-

ness among the leadership of the need to have its command decisions in economic policy significantly and systematically influenced by prior economic calculation. It would be surprising, in fact, if the leadership had not learned some lessons from recent experiences that should have brought home the dangers of economic policy made by command decisions unrelated, and perhaps even contrary, to economic calculation. Although in public the need for administrative reform was justified mainly in terms of shortcomings of the old chain of command, there has been ample implicit admission that the quality of the high-level decisions and orders passing down this chain had often been defective. The outstanding and grossest case (and the most poorly documented one) was the Party Directives for the Sixth Five Year Plan, which evidently had badly failed to match the planners' targets with the real production possibilities of the economy. There have been more candid confessions on less comprehensive, but still very important, decisions of past industrial strategy which are now deemed to have been gross and expensive boners. The infatuation with hydroelectric power is one case in point. Another was the continued high-pressure expansion of coal mining, conducted, as is now claimed, against the better knowledge (at the staff levels of planning, presumably) of the superior economic advantages of developing the petroleum and natural gas industries.

This readiness of the policy-makers to let their command decisions benefit from economic calculation may be quite an important complement to the formal measures of reform in industry, and also an important qualification to my verdict on the conservativeness of that reform. In order to improve its strategic decisions and directives, the high command seems quite willing to draw on some of the heresies (or potential heresies) of yesterday, and thus to harness them to its conservative task of preserving the fundamentals of the command economy, while at the same time seeking to improve its functioning and structure.

III

On the administrative aspects of the reform, one may be flogging a dead horse by dwelling on the reasons why "decentralization" is not its essential feature and why this term is a misleading description of the whole thing. This has been pointed out by several Western observers.[14] In the Soviet Union, the term has been carefully avoided, and Khrushchev himself has praised the "shrewdness" of an unnamed American commentator who had suggested that the reform was not decentralization but "transfer of centralism nearer to the immediate production process,"[15] which is not a bad description for it. Yet, wrong labels hastily affixed are often hard to remove,[16] and a few words may be in order on why this label was picked, and why it is wrong. The label first

appeared, I believe, because early interpretations of the 1957 measures fell prey to a sort of optical illusion. They focused their attention on the two most conspicuous features of the reform, which—viewed in isolation—did suggest that the center had divested itself of a significant portion of its authority over industry, and had dispersed it to an unexpectedly large number of regional bodies. These features were the disappearance of most of the central industrial ministries and the appearance instead of the hundred-odd Economic Councils.

Much less attention (and Soviet publicity) was given to other essential aspects of the reform, which limited very severely the element of administrative decentralization contained in it. These included: a thorough reorganization of the USSR Council of Ministers and the State Planning Commission, evidently designed to provide industry with a better informed and more effective central high command; and the narrow limitations placed on the authority vested in the new Economic Councils, and a system of checks and safeguards established to keep them within their limited bounds, and responsive to central direction.

The changes made in 1957 at the level of the USSR Council of Ministers and *Gosplan* may be discussed by comparing the nature of, so to speak, industrial representation on the Council, before and after the reform. Under the old system, industry was represented mainly by the thirty-odd ministers in charge of as many branches (in concept if not always in fact) of industry and construction. According to the official critique of this old system, each of these ministers was imbued with his particular departmental interests, had his vision and information restricted to his branch, and was heavily encumbered with routine administrative business. The old Council, on the other hand, provided relatively slight representation to central agencies concerned with, and informed on, broad interbranch and suprabranch aspects of industrial planning and policy, and not burdened by operating responsibilities. These were represented by the chiefs of the two Planning Commissions into which *Gosplan* had been split in 1955, those of the State Committees in charge of specific matters affecting industry as a whole (like promotion of new technology and co-ordination of wage policy), and the chief of the Central Statistical Administration.

Since we know so little about the internal operating processes at the top echelons of the Soviet State-Party hierarchy, there is little point in speculating on how the function of the Council of Ministers within its own decision-making sphere was affected by the prevalence of the spokesmen of industrial departmentalism over those of industry at large. However, since the top-level decisions of industrial policy, presumably, are made in the Party Presidium-Secretariat stratum, the Party leadership would probably assess the worth of the Council of

Ministers not so much by its efficacy as a decision-making body as by its quality as an executive agency for the transmission to industry of top-level directives. Here, it was probably important that the principal machinery for implementing industrial policy was provided by the branch oriented and highly self-contained vertical command structures of the industrial ministries. This system evidently had proved itself a very poor transmitter for the decisions of the high command to industry in the field, and rendered top-level industrial policy making rather ineffective. This much can be inferred, I believe, from the stubborn persistence of so many of the problems of industry, exposed in the years prior to 1957, in the face of repeated and insistent calls for corrective action in the resolutions and directives of the last two Party Congresses and several plenary sessions of the Party Central Committee.[17]

Also, the old system evidently suffered, not only from excessive branch differentiation, which allowed three dozen separate industrial chains of command to reach the "cabinet level," but even more gravely from dilution of the "branch principle," in practice and over time, by ministerial self-sufficiency, and empire-building tendencies. These are alleged to have turned what was intended to be direction of industry by branches into diffuse and somewhat chaotic "departmentalism." Two—possibly extreme—examples were provided by the Ministry of Tractor and Agricultural Machine Building, which accounted for only 16 per cent of agricultural machinery output, while such machinery was produced by enterprises of 24 ministries, and the Ministry of Machine Tool Production, which controlled only 55 out of a total of 171 plants primarily making machine tools, and scattered among 19 ministries.[18]

This administrative scrambling of industry (apart from its well-publicized effects on industrial structure, location, and performance) must have seriously degraded the effectiveness of the old system of central direction, both in the enforcement of policy decisions and in conveying information to the policy-makers. To the extent that it impaired their ability to oversee and foresee the sectoral development of industry, it must have been a source of special frustration for the high command at a time when its policy making was so prominently concerned with the correction of disproportions among, and within, industrial sectors.

These, I believe, were at least some of the defects of the old industrial center which were to be corrected by the simultaneous decimation and reconstitution of the Council of Ministers in May, 1957.

Abolition of most branch ministries was evidently intended to remove two of its faults: the fragmentation of the central chain of command into thirty-odd separate chains and the congestion of the system with administrative routine, which has now been delegated to the Union

Republic governments and the regional Economic Councils. The ministerial seats thus vacated were filled in a way that suggests two main objectives: to have the Council—and the Party policy-makers above it—better served with information relevant to the making of high-level industrial policy and to provide a simpler but more effective chain of command for transmitting directives to the new subordinate executive echelons.

The first objective was served by the allocation to the reunited *Gosplan* of no less than eight seats on the reconstituted Council. This decision to let the planners (with their, presumably, superior and more sophisticated insight into the affairs of industry at large) move in on the Cabinet may well be a formal manifestation of the tendency I had noted before to let central policy decisions be more directly influenced by economic calculation. In a military analogy, it looks as if the "senior staff" was asked to sit closer to the "commanders" to help guide them to better command decisions.[19]

Apart from its invasion of the Council of Ministers, *Gosplan* was also charged with new responsibilities which appear to go well beyond its traditional functions (and which I have not seen adequately explained in Soviet sources). It was directed by the reorganization law to help "implement" economic policies; e.g., a "unified centralized policy for the development of the most important branches of the national economy."[20]

The second objective—that of forging a simpler and more direct chain of command—was reflected, in part, in the appointment to the USSR Council of Ministers of the chairmen of the ministerial councils of the fifteen Union Republics, who are now charged with direction and supervision of the regional Economic Councils.

However, abolition of branch differentiation in the central direction of industry has not been complete by any means. Cabinet representation has been retained for several key sectors of industry (the defense production, electric power, and chemical industries). Enterprises in these sectors have been turned over to the Economic Councils for housekeeping purposes, but their ministries have either survived, or been transformed into State Committees. In both these forms, they evidently now serve as the planning staffs and supply close central supervision of these sectors. For other, publicly unspecified, sectors the same function is probably exercised by those major industrial divisions of *Gosplan* whose heads have been appointed to the Council of Ministers.

As to the other feature which heavily qualifies the "decentralizing" aspect of the reform—the careful and severe restrictions placed on the authority of the regional Economic Councils—I can do little more here

than emphasize their existence and will not even try to summarize the catalogue of their rights and duties contained in the 138 articles of the *Sovnarkhoz* statute.[21] The Councils appear to have some scope for reorganizing industrial production in their regions, along the lines I have indicated above, but only to assure better fulfillment of prescribed plans. Also, their powers in this respect are acquired, to some extent, at the expense of the enterprises rather than by delegation of authority from above. Otherwise, their initiative seems largely confined to submitting proposals for review, change, and approval by higher authority— as in the planning process, where the Councils produce the first drafts of regional plans, with the benefit of the intimate knowledge of local conditions they are presumed to possess. The great stress placed since the reform on the Councils' duty to adhere faithfully to production, investment, and extraregional delivery plans seems to emphasize that the *Sovnarkhozy* are not intended to be autonomous regional authorities but rather are to serve as more effective agents than were previously available for executing plans centrally laid down.

Let me note that there is some inconsistency between the tight regimentation of the regional Councils and the official expectations of great gains in industrial efficiency to be derived from their vigorous exercise of local initiative. For the *Sovnarkhoz* chairman, the line between praiseworthy independent enterprise and blameworthy (or even criminal) infraction of "state discipline" may be finely enough drawn to discourage the former.

On the other hand, the tight reins placed on the Councils probably minimize the risk of unintended autonomy, in the form of promotion of regional autarky, or other manifestations of so-called "localism." The "localist" peccadillos of some *Sovnarkhozy* have been given much deterrent publicity in the Soviet press, but such tendencies (for which there may be some perverse incentive in the new method of planning by economic regions) seem detectable and controllable enough so as not to constitute a serious threat of unwanted decentralization.

It is my impression, in short, that what was done in 1957 at both the top and bottom levels of Soviet industrial administration was intended to remedy weaknesses in the system of central direction of industry and not in any sense to weaken central direction itself. Nor do I see any evidence that adoption of the "territorial principle" of industrial administration denotes any shift in the center's approach to industrial policy, towards a significantly increased concern with regional economics or some kind of "balanced regional development." It is true that in the twenties Soviet industrial policy and industrial organization reflected such concerns. It is also true that since the "branch principle" came into its own in the early thirties, there has been continuous—if

rather academic and operationally noninfluential—interest in so-called "economic regionalization"; i.e., the identification of major "organic" economic regions which, nominally, were taken into account in long-range economic planning.[22] I do not think, however, that it is legitimate to regard the *Sovnarkhoz* system as a revival of the administrative concepts tried out in the twenties (as Soviet writers have done, in pursuit of the current Leninist myth),[23] or to interpret the 1957 reform as an implementation of economic regionalization. Some contributors to the Soviet debate on the 1957 theses seemed to expect that something like the latter was intended. *Gosplan* itself may have shared in this misapprehension, as in 1956 it appointed a commission to redistrict the USSR into a new network of major economic regions, only to have its proposals rejected in 1957.[24]

The territorial scheme adopted in 1957, however, was clearly selected by administrative and not economic criteria. All the new "economic-administrative regions" (to give them their full, and significant, title) conform to, or combine, existing divisions of local government and, at least equally important, the Party organization. The intention is evidently to utilize their apparatus to co-operate with, and supervise, the Economic Councils. To the extent that the 1957 reform was concerned with the spatial arrangement of industry, I believe its concern was confined to remedying the ill effects of ministerial departmentalism on industrial location and interenterprise relations, and to prevent recurrence of the locational absurdities alleged to have been frequent under the old system.

In fact, despite all the emphasis on the territorial principle of administration, many aspects of the reform acknowledge the paramount concern of present Soviet industrial policy with guiding the structural development of industry, on a national scale, in accordance with the leadership's preferences and priorities as to the relative pace of sectoral expansion, and with correction of the sectoral disproportions that have developed in the past. This concern is brought out in the retention of central policy direction of the key sectors by the USSR Council of Ministers, the directives to *Gosplan* which I quoted above, and the stress in the reorganization law that direction of enterprises by the territorial principle must "preserve their branch specialization."

These initial qualifications of the territorial principle have since been supplemented by indications of some reassertion by the center of authority delegated to Union Republics and Economic Councils in 1957, again for the sake of stronger enforcement of central preferences on the sectoral structuring of industry. Thus, any reallocation of investment funds assigned to numerous branches of heavy industry now requires special permission by the USSR Council of Ministers.[25] There is also a

great deal of verbal stress in authoritative organs on the need for firm central controls. In September, 1958, *Pravda* declared that "centralized direction of economic activity is indispensable" for the "task of realizing radical changes in the structure of some branches of industry."[26]

All this may suggest that some conflict has emerged between the intent of the 1957 reform largely to do away with detailed, vertical control of industry by the branch principle and the center's concern with policy making, in effect, according to the same principle. This makes one wonder whether the next version of the organization chart of Soviet industry might not show some reappearance of branch-differentiated verticalism, at the expense of generalized territorialism. At the same time, the center's evident desire to keep a very watchful eye, even in detail, on the rather numerous "key sectors" makes one wonder whether the Soviet industrial high command has actually realized the perennial dream of all high commands: to be relieved of tedious minutiae and free to make its decisions on the lofty strategic level.

FOOTNOTES:

[1] A shorthand term borrowed from G. Grossman, "Economic Rationalism and Political 'Thaw,'" *Problems of Communism*, Vol. VI, No. 2, pp. 22-26.

[2] Cf., e.g., Robert W. Campbell, "Some Recent Changes in Soviet Economic Policy," *World Politics*, Oct., 1956, pp. 1-4; Gregory Grossman, *op. cit.*; R. W. Davies, "The Reappraisal of Industry," *Soviet Studies*, Jan., 1956, pp. 308-331.

[3] R. W. Davies, *op. cit.*, p. 318.

[4] In a decree of the USSR Council of Ministers, "On the Extension of the Rights of Enterprise Directors," *Direktivy KPSS i sovetskogo pravitel'stva po khoziaistvennym voprosam*, Vol. 4 (Moscow, 1958), pp. 451-459.

[5] Dec., 1956, resolution of Central Committee, *Pravda*, Dec. 25, 1956.

[6] N. S. Khrushchev, Theses of report "On the further perfection of the organization of administration of industry and construction," *Pravda*, Mar. 30, 1957.

[7] Report to VII Session of Supreme Soviet, *Pravda*, May 8, 1957.

[8] Reorganization Law, May 10, 1957, *Pravda*, May 11, 1957; and Statute of Economic Council, cited in footnote 21.

[9] More thorough inquiry than I have addressed to this point, and the progress of more time, might also show that the *de facto* effects of the reform may include an element of centralization, on the regional level, of what had been managerial functions in the hands of the Economic Councils and their Branch Administrations. Although conceived as supervisory administrative agencies, they seem to be intimately enough connected with their enterprises to be, in effect, quasi-managerial bodies. That some Economic Council officials feel that way is indicated by a suggestion that they (as well as enterprise directors) should receive bonuses for plan fulfillment and overfulfillment because (in contrast to the old ministerial officials) they are "in daily contact with the enterprises," and influence their operations (*Voprosy Ekonomiki*, 1958, No. 2, p. 135).

[10] Grossman, *op. cit.*, p. 23.

[11] D. Kondrashev in *Den'gi i kredit*, 1958, No. 9, p. 19.

[12] Campbell, *op. cit.*, pp. 8-9.

[13] *Pravda*, Aug. 11, 1958. The period-of-recoupment calculus also has gained a greater measure of doctrinal respectability. At any rate, there was nothing *sub rosa* about its recent endorsement as the preferred criterion of investment-project choice by the Institute of Economics of the Soviet Academy of Sciences. (*Voprosy Ekonomiki*, 1958, No. 9, pp. 154-162.)

[14] E.g., Philip E. Mosely, "Khrushchev's New Economic Gambit," *Foreign Affairs*, July, 1958, pp. 557 ff.; Michael Kaser, "The Reorganization of Soviet Industry and its Effects on Decision-making," paper presented at Berkeley Symposium on Economic Calculation and Organization in Eastern Europe, June 16-18, 1958.

[15] Speech to VII Session of Supreme Soviet, May 7, 1957.

[16] Cf. R. W. Davies, "The Decentralization of Industry: Some Notes on the Background," *Soviet Studies*, Apr., 1958, p. 1.

[17] For instance, the scrutiny of industrial problems by the Party Central Committee session of July, 1955, dealt with many of the same defects that were still being castigated early in 1957, in connection with the reorganization. Cf. Davies, *op. cit.*, in footnote 2 above.

[18] A. V. Efimov, *Perestroika upravleniia promyshlennost'iu i stroitel'stvom v SSSR* (Moscow, 1957), p. 22.

[19] Some of the changes made in the functions of the Central Statistical Administration (whose chief sits on the Council of Ministers, as before) probably are also part of the effort to improve information at the policy-making level. Industry statistics were previously channeled to this level through both the C.S.A. and the industrial ministries. C.S.A. has now become the sole channel; statistical reporting procedures have been simplified, and the frequency and detail of reports reaching high governmental levels has probably been reduced (*Vestnik Statistiki, 1958*, No. 7, pp. 75 ff.).

[20] For the first year of the new administrative regime, *Gosplan* was also entrusted with operating the very sensitive (and badly mismanaged) system of interenterprise "material-technical supply" left over from the disbanded ministries.

[21] *Polozhenie o sovete narodnogo khoziaistva ekonomicheskogo administrativnogo raiona*, Sept. 26, 1957. Published in *Sobranie postanovlenii pravitel'stva SSSR*, 1957, No. 12, pp. 409-429.

[22] Cf. R. W. Davies, *op. cit.*, footnote 16 above.

[23] E.g., V. Kostennikov, *Planovoe Khoziaistvo*, 1958, No. 5, pp. 25 ff.

[24] Efimov, *op. cit.*, p. 34.

[25] *Planovoe Khoziaistvo*, 1958, No. 10, p. 11. These branches include "ferrous and non-ferrous metallurgy, coal mining, the oil and gas, chemical and other principal branches of industry, as well as electric power generation."

[26] *Pravda* editorial, Sept. 19, 1958.

DISCUSSION

ROBERT CAMPBELL: Professor Grossman's paper establishes a very stimulating framework for the consideration of Soviet industrial prices. I consider very appropriate the concepts he employs and I like his emphasis on the fact that in a command economy transfer prices serve only slightly the functions of short-term allocation and managerial choice. Commands often obviate the possibility of choice based on prices and as he has shown managerial behavior is often manipulated more by quasi-prices and index prices than by the transfer prices we tend to be concerned with. I think that he has chosen wisely to define Soviet prices as the "terms on which alternatives are offered" so that the important realities of quasi-prices and index prices can be included under the concept. But the class of quasi-prices is an extremely large one, and we should be aware that in stretching the price system to include it, "price system" has been subtly redefined to cover nearly the whole mechanism of guidance and discipline in the Soviet system—and it is a mechanism that has little in common with what price system usually means. Not that there is any objection to this—he has shown well enough that there is little point in studying in the Soviet economy what we usually mean by price system.

With regard to the quasi-prices, it is important to emphasize that while they are consciously employed by Soviet planners as an important determinant of enterprise behavior, they constitute a clumsy class of prices in practice. The reader of Soviet planning literature finds frequent instances of quasi-prices that prompt gross irrationalities and instances where the introduction of new quasi-prices to eliminate old irrationalities simply breeds new ones. To a large extent this is because of the inherent difficulty of co-ordinating the impact of so many separate classes of prices on decisions, but it is also because any system of administered prices must have the discreteness Professor Grossman has mentioned. The price-makers can handle only a certain degree of detail, and their prescriptions must be calculated with an eye to the general case. Since many cases differ from the general situation, the terms established lead to undesired responses.

Given that the purpose of the paper is essentially to establish a general perspective for examination of industrial pricing, I think that it has improperly slighted one important question. If choice and the relevance of prices are often eliminated because of prior commands, there is an important question of how prices affect the deliberations of those who issue commands. The striking fact here is that to judge from the literature on price formation the Soviet price-setters give very little explicit attention to the effect of prices on planners. But it is clear that much of the planners' work consists of making choices based on prices, and since the price-setters have not worried about the planners' needs, the planners are often forced to improvise. Hence the existence of the classes of planners' prices and price surrogates that Professor Grossman has mentioned. I would like only to add that this is a very extensive class of prices, and one that is perhaps less marred by the faults we

find with other classes of Soviet prices. The planners are aware of the unsuitability of the Soviet price system for economic decision making and have shown great ingenuity in improving on the prices given by the system and in making up prices that have not otherwise been provided. In addition to those mentioned in the paper, for instance, Soviet planners calculate many different kinds of opportunity cost prices. Furthermore they make a great point of the inappropriateness of transfer prices for their calculations and often try to bypass price links and calculate in terms of the costs or values of a given project in the economy as a whole. They may think in terms of freight costs to the railroads rather than freight charges, marginal costs rather than average costs, the side effects of a project which would not be reflected in costs or value of output figured in transfer prices.

But for all their ingenuity they often cannot get prices that fit the needs of calculation. I would like to take the rest of my time to illustrate this point with the problem of obsolescence and technical progress that is now claiming so much attention in their discussions. They plan to revalue most of the fixed assets of the economy on January 1, 1960, and having recently rediscovered that obsolescence can exist in a socialist economy, they plan to take account of obsolescence in establishing replacement values for these assets. Many of the existing assets are wasteful of current inputs (labor, materials, energy, space, repair) relative to the production coefficients offered by present replacement possibilities. For purposes of the revaluation they want to determine the present replacement values of such assets. A capitalist secondhand buyer would figure the value by comparison with the new asset alternative. The value of the obsolete asset could not be greater than the cost of a new one, and it must be adjusted downward further to allow for the waste that its use will involve. He might thus estimate the value of an obsolete machine by deducting from the price of a modern one the excess operating costs which the former would involve over the period of time he would be committed to it. This is after all a fairly simple, common-sense approach and the same general formula has been advanced by a number of Soviet economists.

As the planners contemplate the existing capital stock, they are also considering whether it might not be a good idea to scrap some assets. We would probably treat the theory of replacement policy as one aspect of investment policy, but I do not think this is the way Soviet planners will be looking at it. So let us formulate a replacement problem in a narrower way, as they themselves will often see it. It seems likely that revaluation with account of obsolescence would show that many Soviet assets were worth less than nothing. They are shown on enterprise balance sheets as assets, but are actually so wasteful that they destroy values rather than create them. Our reaction on finding such an asset would be "scrap it now before it beggars us more." But in the Soviet discussion of obsolescence and replacement, there is a strong revulsion from this judgment. It is said that the prospective plan for production of equipment will not permit such decisions, and the writers hasten to assure each other that the value of an asset signifies nothing about the desirability of replacing it. And, very interestingly, the most recent prescription for valu-

ing obsolete assets is to adjust the value of the new one, not by deduction of excess operating costs, but by applying the ratio of unit cost of production of the old asset to the new one. A moment's reflection will show that this formula is clearly wrong, but it has the happy advantage of never unearthing assets worth less than nothing. So it looks as if the central authorities are trying to construct a bias for overvaluing obsolete assets.

But probably this sentiment is sensible. The genetic approach to price formation produces prices for modern equipment that make theoretically correct replacement formulae practically inappropriate. So in this case we see the planners working out opportunity cost values for an item but unable to use it because of errors in other prices.

It has often been suggested, of course, that only now is the Soviet economy reaching a point where these kinds of choices and the possible errors induced by misleading prices are becoming quantitatively important. And the planners may shortly be saved from the dangers of misleading prices, just as this problem becomes serious, by complicated new calculation approaches (using electronic computers) which depend much less on prices.

David Granick: In studying the Soviet Union, it is often helpful to link our discussion of the peculiarities of this national economy to more general economic problems. Not only is such a tie likely to improve our analysis of the USSR, but, since many broad problems find a peculiarly sharp expression in the Soviet economy, it may also contribute to general theory.

In this spirit, we can treat both the papers we have heard as contributions to the present research on "theory of the firm."

This seems particularly appropriate for Gregory Grossman's paper. Grossman, in his view illuminating description of pricing within the state enterprise sector of the Russian economy, is really discussing a purely administrative problem. For the issues confronting Soviet pricing in this sector are those of contributing to the best possible centralized decisions, of controlling the execution of these decisions within subunits of the Soviet state economy, of leading the middle management groups in charge of these subunits to make decisions of their own which are in line with the top-level decisions, and finally of evaluating these middle managements. Grossman's frame of reference is Western value theory, and thus he quite properly finds marked differences between the basic functions of pricing in the Soviet Union and in the value-theory model. But if his frame of reference had instead been the use of pricing and accounting in large American corporations, the differences found would have been much smaller.

Thus we find strong similarities in American corporations to the picture which Grossman has painted. This is the case with regard to the control and evaluative functions of pricing for exchange between divisions of the same corporation; to the functions and limitations of accounting data; to the conflict of outlook and objectives within top management which makes impossible a rationality derived from a single desideratum; and with regard to the employment of average-cost statistics for setting prices. We even find

within American firms much the same spectrum of different kinds of prices which Grossman so correctly points to in the Soviet Union.

For these reasons, it may be questioned whether economists studying the Soviet Union are well advised to take economic theory as their only point of departure. Traditional economic theory is concerned with interrelationships between organizations (i.e., firms) rather than within organizations. Perhaps organizational theory, and American corporate practice, should be used as equally vital starting points for examining the Soviet economy.

Oleg Hoeffding's paper is deliberately organizational. His basic points strike me as completely sound and as well worth making.

Hoeffding argues that the 1957 administrative reform was conservative in essence, simply reshuffling the existing industrial table of organization. He believes that this reform has probably not increased managerial powers at the plant level and in fact is likely even to have reduced them. He denies that the reform was a move towards decentralization and instead insists that it was an effort to remedy weaknesses in the system of central direction of industry. Finally, he suggests that all is not lost for the branch principle of industrial administration and that the territorial principle may not rest secure for long in its present glory.

To all this, I can only say: Amen! I would quibble with Hoeffding in his apparent treatment of "mass participation" as a new type of interference with plant directors. Also, I do not see important new developments in rationality of decision making by the Soviet leadership. But such differences between us are minor. Instead of dwelling upon them, let me try to put the 1957 reform into the framework of administrative problems facing any large industrial organization.

As an organization grows, it faces the problem of how—not of whether—to decentralize decision-making functions. Either the head of the organization delegates some of his authority or he finds that he is keeping only the form and not the reality of power. This is because refusal to delegate entails inability to make decisions and to control their execution; it is a form of abdication.

At the same time, if we look at successful American industrial corporations we find that decentralization is carried on inside the framework of decisions made at the top of the organization. With all the phrases which one hears mouthed as to how each divisional and plant manager should act as an independent businessman, we find that the important decisions in finance, accounting, personnel, advertising, public relations and research are usually highly centralized. Thus decentralization in American industry seems intended to be a means for improving the execution of central policy. Clearly, it has this same function in the Soviet Union.

There are three broad classifications of decentralization procedures. One is by function: giving a functional department, such as engineering, the final decision. This is the procedure advocated by Taylor, but it has never been tried extensively—except, perhaps, in the Soviet Union—and does not seem to have worked well. The second form of decentralization is by product or technological process; this is the form which dominated in the USSR until last

year. The third form is decentralization by region. Both of the latter two forms are found in American business corporations, although the division by product is the more common of the two.

Although the industrial organization as a whole has its basic goals, the various subunits in the organization tend to develop their own independent goals. This seems to be a fairly universal tendency. Under Soviet conditions, a prime goal has been that of protection from dependence on others. Given the strong and permanent sellers' market in Soviet industry, this is an entirely rational objective for any subunit of the organization. Thus we have seen three decades of struggle towards organizational autarky carried on by the industrial ministries and their subdivisions. The autarkic tendency has been combated from above by splitting and recombining the organizational units, and doubtless these measures have had their effect in slowing down the process. But a malfunctional offshoot of these measures has been the isolation of the individual enterprise (plant) as the only truly stable organizational unit in industry. As a result, much of Soviet industrial autarky has centered at the factory level, and considerable decision-making power has fallen into the hands of the plant managements.

In 1957, the central authorities struck out to recapture control. The old ministerial subunits have been eradicated root and branch, and this has been done by changing the form of decentralization employed for administrative purposes. This shift serves to completely disintegrate the old empires existing above the enterprise level, although it does not solve the problem of autarky on a plant level.

A second function of the 1957 reform, strongly emphasized in Soviet speeches and writings, is to bring higher management into ready contact with plant management. Geographic obstacles to consultation and contact are now swept aside. The goal here may be interpreted simply as that of improving the quality of higher level decisions, but it seems to me that a much more important objective is to regain control over the plants. With top management really available for consultation and with red tape reduced, plant managements should no longer be under such great pressure to violate rules and to make their own decisions. As obedience to central orders becomes more practicable, it should also become more real.

Thus the 1957 reform, as Hoeffding has pointed out, probably represents a loss of actual power by plant management. But it also represents an important psychological gain for this middle management group: for it contributes "legitimacy" to the remaining powers of plant management. Genuine consultation with higher management is now possible. Compared to the past, enterprise managements can take the path of legality and legitimacy.

As Hoeffding has shown, there still remain organizations concerned with entire industries and their national production. Largely, these bodies are inside the State Planning Committee. It seems clear that this dual structure is virtually inevitable. Under the old ministerial system, for example, the regional form of co-ordination of industries was represented by the powerful Communist Party committees. But a delicate balancing problem results. If the State Planning Committee is made too powerful, then factory managements will

find that they are really serving two masters. Apparently this actually occurred during 1957 as a result of the administration of procurement. If this were to continue, factory managements might be expected to take on additional *de facto* illegitimate power as the only means of getting their job done. Central authority might end up with less control than it had had before 1957.

On the other hand, the opposite risk seems to me also serious. If operational control is left solely in the hands of the regional Economic Councils, one would expect organizational pressures to force them towards autarky just as it had previously forced the ministries and their subdivisions. For this reason, it seems to me that Hoeffding understates the dangers of "regionalism" which exist in the present administrative structure. But he is quite correct in pointing out that the existing structure may not be permanent.

One last comment remains. Reduction in the number of people involved in paper work was originally put forth as still another objective of the reform. From conversations this past summer in the Soviet Union, I gathered the impression that no one expected much to be achieved in this regard. But a comparison with American industry indicates that Russian industry was in fairly good shape in this regard even before 1957. In Soviet industry, administrative and white-collar workers at all levels comprised about 20 per cent of manual workers in 1956. While American industry had a lower proportion than this in 1940, our percentage had risen to 29 per cent by 1954, and to 27 per cent even when using Soviet employment weights of a ten-category industry classification. Measured on a comparative basis, the number of white-collar workers in industry is not a major Soviet problem.

THE NON-RUSSIAN COMMUNIST ECONOMIES

STRUCTURAL CHANGES IN THE ECONOMY OF THE CHINESE MAINLAND, 1933 TO 1952-57*

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During the past two decades, China has undergone changes so violent, extensive, and intensive as perhaps no other nation has experienced in such a short time. Even confining our analysis to the economic aspects only, we can do no more in the space allotted than to carve out a most sketchy outline. The cursoriness of our analysis is mitigated somewhat by the quantitative background presented here in the form of a set of preliminary estimates of national product and expenditure accounts.

Coverage and Reliability of the National Product Estimates

Dictated by the data available for China outside of Manchuria, estimates for the prewar period have been made only for the one year of 1933. This is unfortunate. There are evidences of fairly rapid development of light manufacturing industries in China proper and of heavy industries in Manchuria during 1931-36. A comparison of the pattern of growth during this period with the recent Communist development would have been illuminating. However, the single year estimate for 1933 is significant. It furnishes a base against which one can measure the standard of living prevailing in recent years. A comparison of the 1933 market prices with the controlled prices in the Communist economy of 1952 is also useful for many purposes. Statistics are so scarce and unreliable for the period of the Sino-Japanese War (1937-45), for the two postvictory years of bitter internal fighting (1946-48), and for the early period of the Communist regime (1949-51), that any estimate of national product for these years would be questionable. By 1952, the year immediately before the launching of the First Five Year Plan, the economy had largely been rehabilitated from the ravages of war. Communist statistics also become more abundant and less unreliable. Estimates for all the six years 1952-57 have therefore been made to provide a basis for evaluating the performance of the Communist economy during the first plan period ending in 1957.

It cannot be overemphasized that the basic data are weak and scarce

* The National product and expenditure estimates presented in this paper are the result of a RAND research project undertaken by the author jointly with K. C. Yeh and Chong Twanmo. In preparing these estimates, the author has benefited from suggestions of Hans Heymann, Jr., Oleg Hoeffding, J. A. Kershaw, Simon Kuznets, and R. H. Moorsteen.

for all the years covered and that bold assumptions have had to be made to bridge over the gaps. In addition to inaccuracies, intentional distortion for propaganda purposes by the Communist regime of such statistics as the value of consumer goods produced, retail sales, wage rates, etc., cannot be ruled out. Wherever the use of these data is unavoidable, we have made corrections on reasonable but necessarily arbitrary assumptions. Probably the least unreliable among the Communist statistics that have been used without modification in making our estimates are their data on producers' goods.

The usefulness of any national income estimate is severely limited if the result cannot be put on a per capita basis. Furthermore, while many components of our national product estimates have been derived from production statistics, data on population and its occupational distribution had to be used to close many gaps. The magnitude of the Chinese population has always been a source of anguish to statisticians, and lately a political tint has been added to this controversial subject. For the Chinese Communists have constantly been boasting of the tremendous manpower under their control. However, from a propaganda point of view, it is doubtful whether it would make any difference if the population was 480 instead of 580 million. The 1953 Communist census, showing the Chinese population on the mainland as 580 million, is unquestionably far less accurate than the censuses of Western nations. At the same time it should be noted that their census data are less unreliable than most of their economic statistics. There is little doubt that the Communists knew what their population was better than how much handwoven cotton cloth or how many cattle and hogs they had. More positively, the sex ratio and age distribution given in the Communist census appear more reasonable—and closer to the few relatively respectable prewar sample studies—than the data given in all previous censuses. In fact, if the Chinese population figures for the prewar years are adjusted for the obvious upward bias in the male-female ratios and the downward bias in the zero-to-four age group on the basis of the more reliable sample studies, the Chinese population around 1933 would be in the neighborhood of 500 million instead of the smaller prewar figures with which we are familiar. The round figure of 500 million for 1933 and the Communist population data for the postwar years are used in this study. These population figures have been checked against our estimates of food production. The results are not incompatible with our impression of the per capita food supply in these years.

Inevitably, in deriving our estimates, a great deal of personal judgment was involved. While these estimates may be widely off the mark, we are convinced that they give a more accurate picture of the economy than any impression one could gain from the Communist figures alone.

Moreover, the relative magnitudes of the estimates for the various years are likely to be more reliable than the absolute figures for any single year.

The Estimates

The product and expenditure accounts for 1933 and 1952-57, computed in both constant 1933 and 1952 prices for all the years, are shown in Tables A and B of the Appendix. Three summary tables are presented in the text as the main factual background of our analysis. Tables 1 and 2 follow immediately. Table 3, showing the rates of growth of certain key magnitudes during the first plan period, is presented following the discussion of developments during 1952-57.

TABLE 1

PERCENTAGE COMPOSITION OF DOMESTIC PRODUCT AND EXPENDITURE

(a) Net Value Added by Industrial Origin	Constant 1933 Prices			Constant 1952 prices		
	1933	1952	1957	1933	1952	1957
Agriculture	63%	57%	54%	50%	47%	41%
"Modern" nonagricultural sector*	6	10	19	9	14	24
Government administration	3	5	6	2	4	4
Rest of economy†	29	28	22	39	35	31
(b) Net Domestic Expenditure by End Use						
Personal consumption	94	80	75	87	74	64
Government consumption	4	20	25	13	11	11
Net domestic investment	2				16	25

* Including "modern" manufacturing, mining, utilities, construction, and "modern" transportation and communications.

† Including handicraft manufacturing, old-fashioned transportation, trade, finance, personal services, imputed rent and forced labor.

TABLE 2

PER CAPITA PRODUCT, CONSUMPTION, AND INVESTMENT*

	Constant 1933 Yuan			Constant 1952 Yuan		
	1933	1952	1957	1933	1952	1957
Net domestic product	60	56	64	134	126	156
Personal consumption	57	45	48	118	95	100
Food consumption	37	30	32	72	60	62
Government consumption	2				13	18
Net domestic investment	1				20	39

* For obvious reasons, the temptation to convert these figures to U.S. dollars on the basis of the official exchange rate (1 U.S. dollar = 2.34 1952 Yuan) must be resisted.

The Economy in 1933

The year 1933 was rather representative of the prewar period in the overwhelming importance of agriculture and the insignificance of the

"modern" nonagricultural sector in the economy (see Table 1*a*), and in the preponderant proportion of consumption in total expenditure (94 per cent as computed on 1952 prices, see Table 1*b*). While per capita output and consumption were both pitifully small, investment per person was negligible (see Table 2). A striking feature of the data is that the percentage distribution of the total product, both by industrial origin and by end use, as computed on 1952 prices, is significantly different from that obtained on 1933 prices. The 1952 price weights undervalue greatly the net value added by agriculture, but overvalue substantially the contribution of the "modern" nonagricultural sector and, to a lesser extent, that of the "rest of the economy," to the total product. They also undervalue the percentage share of consumption in total expenditure, thus exaggerating the proportion of investment and government consumption. In 1933, both indirect taxes and government subsidies were negligibly small compared to the total product. Arbitrary allocation of resources and price controls by the government were also absent. The ratios of the value added by the different sectors, as measured in 1933 prices, would correspond roughly to the relative factor cost incurred in the different sectors. The implications of the difference bebetween the 1933 and the 1952 price weights will be discussed in connection with the institutional changes which brought about the 1952 pricing system.

Comparison of Economic Structure and Institutions, 1933 and 1952

The importance of agriculture and of the rest of the economy is reduced and that of the modern nonagricultural sector and government administration substantially increased in 1952, as compared with 1933. (See Table 1*a*.) Drastic changes occurred in the allocation of resources by end use. (See Table 1*b*.) Personal consumption amounted to only 74 per cent of total expenditure in 1952 (as computed on 1952 prices), a reduction of 13 percentage points from the 1933 proportion. Most significantly, this reduction in the consumption share occurred in a year when the total net product was not significantly greater than in 1933 (see Table A of the Appendix). The result was of course an extremely painful decline in per capita consumption (see Table 2). The reduction in food consumption was almost as drastic.[1] The overvaluation of the

[1] It might appear to be questionable whether per capita food consumption in 1933 was sufficiently ample to permit a 17 per cent reduction to the estimated 1952 level. The explanation lies in the fact that, according to our estimates, per capita consumption of staple food was only 4 per cent lower by weight in 1952 than in 1933. However, potatoes accounted for about one-third of the total staple food production in 1952 while the corresponding proportion was only a little more than one-seventh in 1933. On a per pound basis, potatoes were not only cheaper than grains such as rice, wheat, etc. (hence the substantial reduction in the value of per capita food consumption from 1933 to 1952), but they also supply less calories. They nevertheless fulfilled the bulk requirements of the Chinese diet.

modern nonagricultural sector and the rest of the economy[8] relative to agriculture and the undervaluation of personal consumption relative to investment and government consumption by the 1952 price weights as compared to the results obtained in terms of 1933 prices are again in evidence. (See Table 1*a* and 1*b*.) What were the forces that had brought about these changes?

Through the "Three-Anti" and "Five-Anti" movements during 1951-52 and the power to allocate raw materials and credit, the Communists had, by 1952, gained just about complete control over the modern non-agricultural sector. It was therefore not difficult for the Communists to carry out their decision to expand the modern sector and to increase investment as such; capital expansion simply followed government orders. However, it was not as simple to suppress the competition for the required resources from other directions. There was actually no longer any voluntary private saving to speak of in 1952. The excess of production over consumption, whether for investment or for government consumption, was entirely forced on the population. Funds were secured by the regime through the following means, ranked in order of their probable quantitative importance in 1952: commercial and industrial taxes, profits from government enterprises, agricultural taxes (mostly in kind), compulsory purchases of government bonds, confiscation, and new note issue. The inflationary effect of the last was largely neutralized by what amounted to partial freezing of deposits.

Moreover, by 1952, the regime was in firm control, not only of the industrial enterprises, but also of all large-scale trading activities (government trading corporations themselves and marketing co-operatives, including those dealing with agricultural products). The government was, therefore, in a position to determine the price structure more or less at will. The combined effect of the taxation and pricing policies imposed on agriculture, industry, and trade was such that the terms of trade turned against the peasants, the handicraftsmen, and the workers in the other old-fashioned sectors of the economy. Prices of modern manufacturing products in 1952 were, as a whole, roughly four times as high as in 1933, handicraft prices about 2.3 times, and agricultural prices only about 1.8 times. The peasants, especially, were squeezed three ways: by direct taxation, by the government purchases of "surplus" agricultural products at low fixed prices, and by the high prices for the goods they had to buy. In the meantime, however, to the extent

[8] There is overvaluation of the "rest of the economy" by the 1952 pricing system, as compared to the 1933 relative position (see Table 1*a*), only because "trading" is included here. Net value added by trading, valued at the established prices of 1952, includes greatly increased indirect taxes and government profits. If trading is excluded from the rest of the economy, then the value added by the latter would be greatly undervalued by the 1952 pricing system relative to the modern sector, as compared to the 1933 relative position.

that government enterprises used agricultural and handicraft products as raw materials and intermediate products for further fabrication, this pricing system increased government revenues more than expenditures and hence helped to augment profits accruing to the government.

Developments during the First Five Year Plan Period

It is not possible here even to give an outline of the first plan; nor is it necessary. The first plan was not a true plan in the sense of a project prepared prior to its execution. It contains no serious discussion of the financial, fiscal, and other economic policies required for its implementation. In fact, the plan was not announced until mid-1955, when half the plan period was over. Indeed, by that time, it would not have been difficult for the technicians to pull together a set of target figures which the regime could expect to achieve during the period. After the plan was announced, determined efforts were in fact made by the regime to force its fulfillment. By and large, there is little doubt that the target

TABLE 3

RATES OF GROWTH OF DOMESTIC PRODUCT AND EXPENDITURE
1952–57

	Constant 1933 Prices			Constant 1952 Prices		
	Average Annual Rate of Growth*	Smallest Rate and Year	Largest Rate and Year	Average Annual Rate of Growth*	Smallest Rate and Year	Largest Rate and Year
Net domestic product	5.2 [±3.2]	2.5 (1956–57)	11.3 (1955–56)	6.9 [±3.5]	3.6 (1956–57)	13.5 (1955–56)
Agriculture	4.0 [±3.3]	−0.3 (1953–54)	7.8 (1954–55)	4.2 [±3.3]	−0.2 (1953–54)	7.4 (1956–57)
"Modern" nonagriculture	19.6 [±8.8]	10.0 (1956–57)	31.2 (1955–56)	19.6 [±9.7]	7.8 (1956–57)	33.2 (1955–56)
Government administration	7.9 [±11.36]	−0.41 (1956–57)	30.2 (1952–53)	7.9 [±11.37]	−0.5 (1956–57)	30.2 (1952–53)
Rest of economy	0.6 [±7.4]	−9.1 (1956–57)	12.2 (1955–56)	4.0 [±5.8]	−3.5 (1956–57)	13.2 (1955–56)
Net domestic expenditure				6.7 [±2.8]	4.0 (1953–54)	11.7 (1955–56)
Personal consumption	3.7 [±4.9]	−4.7 (1952–53)	10.4 (1954–55)	3.5 [±3.8]	−2.4 (1952–53)	8.7 (1954–55)
Government consumption				11.4 [±27.5]	−27.4 (1953–54)	57.5 (1952–53)
Net domestic investment				17.9 [±9.2]	2.4 (1954–55)	30.0 (1953–54)
Per capita rates						
Net domestic product	2.8 [±3.3]	−0.5 (1956–57)	9.0 (1955–56)	4.4 [±3.6]	0.5 (1956–57)	11.1 (1955–56)
Personal consumption	1.3 [±4.8]	−6.7 (1952–53)	8.0 (1955–56)	1.1 [±3.8]	−4.4 (1952–53)	6.4 (1955–56)
Government consumption				8.9 [±27.1]	−29.1 (1953–54)	54.3 (1952–53)
Net domestic investment				15.1 [±9.02]	0.2 (1954–55)	26.9 (1953–54)

* The figures in brackets are the standard deviations of the average annual growth rates. There is no observable trend in any of the rates of growth given in this table.

output of producers' goods was achieved. However, the claim of the fullfillment of the planned output for consumer goods as a whole must be rejected as a gross exaggeration.

While it would not be worth quoting some of the mass of statistics presented in the plan or in the report on its fulfillment, two important features of the basic philosophy underlying the first plan might be noted. First, agriculture was neglected. Either the Communists were overconfident about their ability to raise agricultural production without investing much resources in it or they were not fully aware of the important role agriculture must play in the process of industrialization. Second, the entire plan revolves around 156 large-scale modern plants which were being built with Soviet assistance. Emphasis was explicitly placed upon modern, big, and capital-intensive factories. While forced labor was used in building roads, dams, and river works, the possibility of substituting abundant and almost costless labor for capital in manufacturing industries was apparently overlooked or deprecated.

The changes in the structure of the economy were quite pronounced from 1952 to 1957. Net value added by agriculture in 1957 was a mere 41 per cent of the net domestic product when measured in 1952 prices. (See Table 1*a*.) The contribution of the "modern" nonagricultural sector reached the respectable level of one-fourth of the net product. Twenty-five per cent of the current output in 1957 was saved for investment purposes. (See Table 1*b*.) Government consumption and investment together accounted for more than one-third of the total expenditure. Per capita product increased by one-fourth from 1952 to 1957. (See Table 2.) However, per capita food consumption, while somewhat higher than the 1952 level, remained 14 per cent lower than in 1933.[3] When computed on 1933 prices, the importance of the modern nonagricultural sector and of investment and government consumption in the total product diminishes, but the indicated changes remain impressive.

As shown in Table 3, the most striking feature of the pattern of development during this period is the lack of regularity in the rates of growth of all the important components of the national product. There is no apparent relationship between the year-to-year rate of growth of any of the series either with time or with previous investment. Instead, all of them fluctuated widely with no discernible pattern. Certainly the Communists could not have planned it that way. In fact, they have attributed much of the fluctuations to the lack of stability in agricultural output over which they claimed to have no control on account of natural disasters. Actually, the relationship between the variations in

[3] See footnote 1. By 1955, the 1933 level of per capita consumption of staple food had probably been restored in terms of weight. At the same time, potatoes had gained a prominence in the Chinese diet equal to that of rice. By 1957, potatoes became the leading staple food product in China.

the rates of growth of agriculture and of the other sectors is, on the basis of our data, neither obvious nor definite.

Table 3 also vividly brings home the true nature of a developing economy under Communist control. Per capita consumption, while still below the 1933 level, barely managed to increase by an average of 1 per cent per year. This increase was, however, subject to overwhelming uncertainty; for instance, when computed on 1933 prices, per capita personal consumption declined by 1.7 per cent from 1956 to 1957. Granted that it has not been a Communist aim to improve the standard of living either in the past or for the immediate future, the economy cannot be judged as functioning satisfactorily as long as the uncertainty involved is so great.

The average annual rates of growth of the modern nonagricultural sector and of net domestic investment are truly impressive; however, even for these items, the margin of uncertainty remains very large. Bearing in mind that, in 1952, the modern nonagricultural sector accounted for only 14 per cent of the economy (see Table 1*a*), expansion at an average rate of 20 per cent per year does not in itself appear impossible or even difficult. A fair evaluation must take into consideration the cost in terms of the consumption standard which, as we have seen, has suffered a great deal. Moreover, the Chinese population did not voluntarily choose to live for six years at a subsistence level lower than the prewar standard. The low consumption level was maintained by deliberate and strict government measures. On the one hand, taxes on industry and commerce and profits transferred from state enterprises to the government increased respectively by 80 per cent and 150 per cent from 1952 to 1957. On the other hand, the control over the distribution of food and many other necessities was further tightened toward the end of 1953 and was then replaced by outright rationing in 1955.

The performance of the agricultural sector during the entire first plan period must be considered a failure. It might appear that an annual average rate of growth of 4 per cent is no mean achievement. But one must note that per capita food consumption was, in 1957, still very substantially below the 1933 level. This lack of progress in agriculture is not really difficult to understand. For those years after the completion of the land redistribution program in 1952, the peasants were unsuccessfully urged by the regime to join "co-operatives." However, by the end of 1955, membership in co-operatives was no longer a matter of choice; and within one year, practically all peasants had given up their ownership of land and had become members of co-operatives. Under such circumstances, it is likely that the peasants were less enthusiastic in their work than the Communist cadets who "managed" the co-opera-

tives. Abuses of the peasants by the cadets were loudly reported during the brief "hundred flowers blooming" period when people were urged to voice their grievances.

Conclusions

Since the average annual rate of growth of the net domestic product during the First Five Year Plan period appears to vary from about 5 per cent per year in constant 1933 prices to about 7 per cent per year in constant 1952 prices (see Table 3), it would obviously be hazardous to compare the performance of the Communist economy on the Chinese mainland with other countries with a different price system. However, there is little doubt that the output of producer goods has increased greatly. Thus, the production of steel probably did increase from 1.4 million tons in 1952 to 5 million tons in 1957 and cement from 2.9 to 6.8 million tons. But, under the greatest tyrant China ever had, the First Emperor of the Ch'in Dynasty, China built the Great Wall, perhaps some 500 miles long at that time, in the late 200's B.C. It is difficult to say whether the ancient or the modern "achievement" is the more difficult. Certainly, the cost in human suffering and sacrifice was great in both cases, and some rough statistical indication of the current situation has been presented in Table 2. What is more important to the Communists, however, is that this sacrifice and suffering has had a telling effect on the incentive to produce things other than steel, cement, and the like. The lack of progress in agriculture and the other old-fashioned sectors of the economy[4] may have become a limiting factor to the development of the modern sector itself. To solve this problem, two alternatives were open to the regime: raise the incentive or use stronger compulsion. The latter course was apparently adopted. Communes were founded in early 1958, compelling everyone, women as well as men, to live the life of soldier-peasant-laborer simultaneously. For a while, under this system, agricultural and other output may show an increase, not because people love to live in barracks, but because the utilization of labor in the communes can be even more intensified and closely supervised than before. The lack of cows, plows, and modern blast furnaces could be made up to some extent by more intensive exploitation of labor, the social marginal cost of which has bordered on zero. The intensification of the utilization of labor in manufacturing (witness the advent of the backyard blast furnaces) and in agriculture appears to be an indication of a significant modification of the basic philosophy underlying the first plan, even though this substitution of labor for capital is effected through compulsion rather than through incentive. It is beyond the competence of the author to speculate on the chances

[4] See the negligible rate of growth, as measured in 1933 prices, of the rest of the economy given in Table 3. See also footnote 2.

of success of such an experiment. Historians, political scientists, and sociologists are in a better position to judge whether such a system is likely to endure.

APPENDIX

Preliminary Estimates of Domestic Product and Expenditure, 1933 and 1952–57*

TABLE A

Net Domestic Product by Industrial Origin

(Billion)

	Constant 1933 Yuan							Constant 1952 Yuan						
	1933	1952	1953	1954	1955	1956	1957	1933	1952	1953	1954	1955	1956	1957
Net value added by agriculture	18.8	18.1	18.2	18.1	19.5	20.7	22.0	33.7	33.7	33.9	33.8	36.4	38.4	41.2
"Modern" non-agriculture	1.8	3.1	4.0	4.8	5.2	6.9	7.6	5.8	10.0	12.8	15.1	16.8	22.3	24.1
Government administration	0.8	1.6	2.1	2.1	2.2	2.3	2.3	1.4	2.9	3.8	3.8	3.9	4.1	4.1
Rest of economy	8.7	8.8	9.0	9.3	8.8	9.9	9.0	26.1	25.1	26.5	28.0	27.8	31.5	30.4
Net domestic product	30.1	31.6	33.2	34.2	35.7	39.7	40.7	67.0	71.7	76.9	80.7	84.8	96.3	99.9

TABLE B

Net Domestic Expenditure by End Use

(Billion)

	Constant 1933 Yuan							Constant 1952 Yuan						
	1933	1952	1953	1954	1955	1956	1957	1933	1952	1953	1954	1955	1956	1957
Personal consumption	28.6	25.6	24.4	25.3	27.9	29.5	30.6	59.1	53.7	52.5	54.8	57.9	62.9	63.8
Government consumption	1.2	6.4	9.3	9.1	8.4	10.1	10.4	8.4	7.7	12.1	8.8	10.2	11.2	11.3
Net domestic investment	0.5								11.3	13.4	17.5	17.9	22.0	25.2
Net domestic expenditure	30.3	32.0	33.7	34.4	36.3	39.6	41.0	67.5	72.6	78.0	81.1	86.0	96.0	100.2

* For obvious reasons, the temptation to convert these figures to U.S. dollars on the basis of the official exchange rate (1 U.S. dollar = 2.34 1952 yuan) must be resisted.

THE POLISH ECONOMY AFTER OCTOBER, 1956: BACKGROUND AND OUTLOOK

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The dramatic events of October, 1956, which brought a shake-up in the leadership of the Polish Communist Party and of the Polish state have been often referred to as a "revolution," and there is little doubt that the use of this exalted term is not inappropriate. The "Polish October" came as a combined effect of the pressure from below and of the faltering at the top; it was born of a desire for total change in economic as well as in noneconomic spheres; lastly, and not unlike many revolutions of the past, its results, while significant enough, have fallen short of expectations aroused at the start. All this makes the discussion of recent Polish economic developments a challenging and at the same time a highly exacting task, particularly in view of the limitation of space. It is hoped, however, that even a quick thumbnail sketch may serve a useful purpose.

I. *The Six Year Plan Period, 1950 to 1955*

In order to understand the revolution, we have to take a look at the *ancien régime*. The Polish economy of the early fifties, governed by the "Six Year Plan of the Economic Development and Construction of the Foundations of Socialism, 1950 to 1955," displayed familiar characteristics of the Stalinist pattern and seemed to move inexorably toward complete adaptation to it in every important respect.

On institutional level, 99 per cent of the Polish industrial output in 1955 came from state-owned enterprises or state-controlled co-operatives.[1] In agriculture, the collectivized sector was slowly but steadily gaining ground: in June, 1956, it covered 23 per cent of agricultural land, with nearly three-fifths of this area belonging to the state farms and the rest to the "production co-operatives" whose number had risen from 243 in December, 1949, to 10,510 in September, 1956.[2]

In the field of economic administration the centralist "command economy" reigned supreme. The managers were severely constrained in their decisions by the fact that resources (with labor as the most important exception) were allocated to them from above and that only minor variations in the product-mix were permitted with the fulfillment of global output target in grown value terms being the main objective and with bonuses for fulfillment or overfulfillment as the strongest

[1] This and all other footnotes appear at the end of this paper.

pecuniary incentive to expand output. The price system while showing a measure of operativeness on consumer goods markets was largely nonfunctional as a vehicle of resource allocation. Moreover, although prices of goods were ostensibly related to average costs purporting to reflect the "socially necessary labor" (with no allowances for interest on capital or for scarcity rents in case of natural resources), they were subject to "deviations from value" such as turnover tax on consumers' goods and subsidies for producers' goods and were permitted to stay at levels at which demand would exceed supply.[3]

The pattern of growth is illustrated by the tables in the Appendix. They show the index of national income advancing by 73 per cent between 1949 and 1955, the index of gross industrial output shooting far ahead and nearly trebling, with the index of engineering and metalworking moving much faster still, the index of industrial materials developing considerably slower, and the output of four grains being almost stagnant. The rate of net capital formation, finally, shows a steep rise from its initial level of 15 per cent and fluctuates between upper and lower limits of the 20 per cent range during the subsequent period. The statistical methods used in compiling these data contain a number of deficiencies which have been freely admitted by Polish economists during the last few years. They make it virtually certain that most of the indexes in question contain a substantial upward bias also after the inherent intractabilities of index numbers in a rapidly changing economy (the "Gerschenkron effect") have been allowed for, and that peculiarities of the Soviet-type pricing must have resulted in understatement of the rate of capital formation.[4] Yet there was no disposition on the part of critics to argue that a differently construed index would yield a substantially divergent pattern of development or that the scaled-down rate of growth would not be high by comparative standards.

It is not difficult to discover a large measure of interrelatedness between these three aspects of economic structure. Given a decision in favor of a rate of growth which would be very high when measured against the normal productive capacity and saving potential of the economy in question, it could certainly be argued that in conditions of the resulting stress and strain over-all controls aiming at manipulation of broad aggregates might be too blunt a tool to deal with specific bottleneck situations and to expedite the necessary shift of resources from one area to another.[5] It would be even less controversial (and it had been, indeed, standard practice among Western students of the Soviet economy) to explain the turnover tax as a convenient device for mopping up excess demand generated by a high-level investment expenditure whenever the voluntary propensity to save is low and could be made still lower as a result of high direct taxation; lastly, the collective

farm system could be treated as a high-powered tax collection device. Yet while this reasoning can help toward understanding of important aspects of a Soviet-type economy, it certainly cannot carry us the whole way. There is a considerable distance between recognizing the need for selective direct controls to having the size and technological setup of individual plant laid down in the central plan or setting targets for sour pickles to be produced and amount of hares to be shot (to cite two instances which received a considerable amount of derisive publicity in early 1956). Nor would it be self-evident that the turnover tax should be levied on consumers' goods only or that a broad measure of correspondence between prices of producers' goods and their marginal costs (with reasonable disregard of very short-term cost fluctuations) would not improve the rationality of investment decisions even under a system of priorities; and it would be far from obvious that the risks involved in compulsory collectivization would make it under all circumstances a game which was, on purely economic grounds, worth the candle. Moreover, the "very high rate of growth" was up to this point simply taken for granted. But if we decide to scrutinize the underlying decision, a new line of inquiry opens; and in pressing it further we shall do little more than follow up some of the points which have been made with considerable force by prominent Polish economists during the last several years.

The term "disproportions" has come to constitute one of the key words in the present Polish economic vocabulary. It was designed to describe not merely the general state of inflationary tension we just spoke about but also the whole set of underlying (or related) phenomena most of which could be easily gleaned by a quick glance at the figures of our tables. Disparities between rates of increase in total productive capacity and consumption levels, industry and agriculture, metal processing superstructure and raw material and fuel basis of the producers goods' sector, power requirement and power supplies—these were the most important cases in point.[6] It goes without saying that by labeling them as disproportions Polish economists meant not merely to emphasize that some areas of the economy had been growing faster than others and that the fulfillment of plans had been uneven. Their point was that these divergencies when pushed as far as they actually had been were bound to cause loss of potential gains as well as actual waste in the faster advancing areas. The most clear-cut instances of such boomerang effect were frequent interruptions in the work of industrial plants as a result of power failures and low capacity utilization in greatly expanded machine building due to insufficient supplies of materials for processing. Other repercussions were less direct but by no means less important. Slow expansion in coal which had been for

decades the strongest single earner of foreign exchange deprived the economy of some of the vitally needed imports of foreign capital goods and kept the domestic fuel supplies thinly spread. The inability of grain production to meet the mounting demand generated by the fast-growing urban centers or even to keep in step with the increase in total population enforced another cut in industrial imports for the sake of unanticipated increase in imports of food in order to soften the adverse impact of shortage of domestic supplies on the productivity of industrial labor.

The difficulties in the agricultural sphere which reached their climax in 1953 when the harvest of four grains declined to 10 million tons or 75 per cent of the average prewar level in the comparable territory[7] were due only in part to the low investment ratio.[8] Seventy per cent of the total state investment went to the collectivized farming—an amount which was, according to virtually unanimous view of the Polish economists of the later period, less than adequate in order to make new productive units attain the hoped-for advantages of scale. Yet at the same time other factors making for low efficiency within the socialist sector were at work: poor quality of management and scarcity of labor in state farms, restiveness among the none-too-voluntary members of the "production co-operatives," shortage of livestock and crushing burden of the large-size and low-price compulsory deliveries in both. Yet the individual peasants who, it will be recalled, held more than three-quarters of the total agricultural area even at the peak of collectivization drive were not merely deprived almost entirely of investment allocation passing through state channels. They were effectively discouraged from undertaking any substantial investment on their own unless they desired to qualify as *kulaks* and be subjected to vengefully progressive taxation and prohibitively high rates of compulsory deliveries. It was therefore only logical that, according to information released many years later, the estimated investment in peasant agriculture during 1951-53 ranged from 36 to 41 per cent of its 1949 volume—a situation which implied, to quote the same source, "not only a decline in agricultural production and decapitalization in the villages but also a reduction in the marketable share (the village was consuming instead of investing)."[9] Another by-product of this "class war" policy was the progressing fragmentation of farms, in spite of the rapid outflow of the surplus population to the cities. The percentage share of holdings above 5 hectare in the total number of farms declined by nearly 11 per cent between 1950 and 1954.[10] The implications of this state of affairs for the development of living standards in the cities were obvious; even the official real wage index which was published in early 1956 and immediately discarded for its evident upward bias, admitted

a substantial drop in the real wages between 1950 and 1953.[11] In sum, the Polish agricultural planners seem to have fallen between two stools. They did not dare to collectivize all-out, which made their direct hold on agricultural marketable surplus rather tenuous. Yet they were eminently successful in weakening the peasants' stimulus to produce and in letting the urban workers bear the brunt of the resulting decline in consumption.

The limitations of space do not permit us to discuss in detail the impact of the prevailing price system and of the peculiarities of the planning methods on the over-all efficiency of the economy—a problem which received an extensive treatment in recent Polish literature.[12] I shall confine myself to a few remarks about their relevance for some of the disproportions mentioned above. The policy of below-equilibrium prices of raw materials was bound to stimulate their excessive use (to the extent that managers or lower level planners could exercise a certain choice), to encourage their careless handling and to give a wrong slant to technological progress. Material-saving innovations were neglected while laborsaving innovations were pushed, although the prevailing scarcity relationship would dictate the opposite—a point which had been made more than two years ago by Oskar Lange.[13] Another obvious source of waste consisted in the fact that the system of setting targets in gross value terms made it advantageous for the bonus-conscious managers to inflate the raw material content of their output as much as they could.

The situation could be conveniently summed up in terms of the familiar Domar-Harrod formula, $r = s/v$ in conjunction with the Marxian two-department model ostensibly accepted as a theoretical underframe by Stalinist planners. The planned rate of increase in national income (r) during the Six Year Plan was 13.4 per cent per annum. Let us assume the incremental capital/output ratio (v) to be 2, which would be, if anything, too low, since almost a half of the total investment went into industry, and 85 per cent of this amount were allotted to producers' goods lines which were much more capital using than the rest. Accordingly the rate of net investments would have to be nearly 27 per cent—which is obviously very high for a country with low per capita income; attempts to impose it on the economy would generate powerful inflationary pressures and call for drastic measures of compulsory saving which would certainly be resisted one way or another. The picture gets darker if the Marxian model is brought in. It would then become evident that limits for increase in the share of investment in national income lie not only in the community's willingness to acquiesce to the required increase in the rate of nonconsumption but also in the capacity of investment goods industries which had

not been geared to anything like the desired rate of expansion and which could be adapted to it only gradually. (The speed of this adaption, it goes without saying, would be determined by the amount of annual gross investment which went until now to the "Department II" and is now allocated to the "Department I" as well as by the difference in capital requirement and in the length of gestation periods in both sectors.) Consequently, a bit of plain arithmetic should be sufficient to demonstrate that in the initial years there would be no increase in the rate of growth and a definite decline in the output of consumers goods, and while later the positive effects of the relocation process[14] would begin to show (provided the society can take the sacrifices of the interim period), it is utterly fantastic to expect that the national income could more than double within the six-year period if any halfway plausible coefficients are assumed.[15]

This, to be sure, need not be the end of the story: the planners could try to do something to compress (v). This might imply some (or all) of the following: (1) use of highly noncapitalistic methods in lines where it is technologically feasible (the "dual economy" strategy); (2) increasing the degree of capacity utilization, whenever manpower is available; (3) cutting down as far as possible on investment in lines which have particularly long gestation periods and high capital coefficients; (4) relying on foreign trade for some of the highly capitalistic items. In the case under consideration, the first possiblity was out for ideological reasons (crusade against "small-scale capitalists"). Items two and three were actively tried, and item four was certainly strongly desired. But loading of additional (and highly unskilled) labor into existing capacity was followed by steep decline in marginal productivity of labor which (in conjunction with a rapidly swelling wage bill) fanned the inflationary pressure; moreover, the concomitant massive shift of population to the cities pushed up the demand for food and made the shortages of housing more acute. The economizing on outlays in power and coal affected adversely the operation of the economy as a whole and might very well have led, on balance, to a lower and not to a higher marginal efficiency of investment. With regard to foreign trade, finally, soaring domestic demand for coal and food (as well as underinvestment in these lines) kept the export surpluses low and created a stimulus for costly autarky,[16] particularly since the countries of the Soviet bloc, Poland's chief trade partners, were operating, in varying degrees, under pressures of the same kind. To conclude: The attempts to get around the basic dilemma by cutting corners were successful only to a limited extent.[17]

At this point one could not help wondering about the motives for adopting a plan which was so obviously unrealistic. An analogy with

the Soviet developments on the eve of the First Five Year Plan might help toward solution of this puzzle. Both in the Soviet and in the Polish case the period of relatively "cheap" (and highly successful) expansion which was based on full utilization of existing capacity and of eliminating bottlenecks due to the destruction and dislocation had been just brought to a close. The impending shift to full-scale investment offered the same fundamental choice: a moderate industrialization entailing a more or less "peaceful coexistence" with the peasant suppliers of food, or a crash program calling for a noncompensated appropriation of a large part of agricultural surplus with the collectivization as chief vehicle of this appropriation. The natural proclivities of Polish Stalinists were no different from those of their Soviet mentors. They showed similar inclination to combine a romanticized view of potentialities of modern technology with abiding faith in their own ability to manipulate the rate of saving-investment within wide limits and to shorten the gestation period of new projects by stern command and fiery exhortation. Yet in the face of all this it is interesting to note that the Polish followers of Stalin had initially contemplated a much less extremist plan, even after having dutifully purged the deviationist Gomulka in the summer of 1948, and there is fairly conclusive evidence that the drastic revisions in the final draft were made on Soviet "friendly advice."[18] It would be not unreasonable to assume that the authors of the initial draft were aware at least of some of the differences between the Soviet and the Polish situation which were brought out with considerable force by the Polish economists of the post-October period. They must have realized that in case of Poland the cost of autarky and of an all-around development pattern would be bound to be much higher as a result of a more lopsided endowment with natural resources and of smaller size of the economy which made it impossible to achieve advantages of scale in a comparably large number of industries. They could hardly have been ignorant of the fact that Poland lacked virgin lands which would be put into use in order to compensate, at least in part, for the decline in agricultural output which was bound to occur in process of forced collectivization, and they had every reason to expect that the Polish peasants would put up an even more formidable resistance than their Soviet opposite numbers had done in the late twenties and early thirties. Under such conditions, the "big push" along the lines of the First Soviet Five Year Plan could be assumed to usher in a period not of relative stability but of mounting tensions. No doubt, Stalin's views as to the imminence of war must have been, particularly since Korea, a weighty factor behind the pressure for all-out increase in output of armaments and in related industries throughout the orbit, regardless of cost.[19] But the strategy of all-around development at

breakneck tempo might very well have been designed to serve more than one purpose. It was instrumental in making Poland as well as other countries of the bloc dependent on the Soviet Union for supply of materials which they needed, but utterly lacked, for carrying through this pattern of growth. Besides, and no less important, it helped to maintain the whole area in a state of high tension which prevented the local regimes from losing their uncompromising rigidity and from backsliding into some kind of "right wing nationalism." The Polish economic policies of the early fifties were effectively molded by these influences. One might merely guess as to what the course of the events might have been if the creator of the pattern had not passed away in March, 1953, and if the deepening disproportions in Polish Stalinized economy had not coincided with the beginnings of the Soviet "thaw."

II. *Beginnings of the Polish "Thaw"*

The developments of the period which followed Stalin's death brought a measure of relaxation. There was a certain easing in taxes collected from peasants and a reduction in rates of compulsory deliveries levied on the poorest among them; moreover, use of outright pressure in promoting the production co-operatives was officially deplored. The rate of investment was reduced by several percentage points and the share going to agriculture rose from 8 per cent in 1953 to 11 per cent in 1954 and 14 per cent in 1955. Certain changes in the price structure took place; more specifically, attempts were made to bring the prices of producers' goods into line with costs. Yet all these policies were inconclusive, or worse. Increased allocations to agriculture went almost entirely to the socialist sector; in fact, the year 1955 saw a resumption of the collectivization drive on a large scale. Cuts of investment in heavy industry carried out across the board brought to a halt some of the construction processes in the next-to-final stages. Postponement of completion of the quality-steel mill Warszawa which led to large underutilization of capacity in automobile factories was a particularly drastic example of such parsimony which was as haplessly indiscriminating as the prodigality of the past. Rise in prices of producers' goods was followed up by wage increases which recreated the deficits (although to a somewhat attenuated degree) and thus negated the purpose of the reform. Nor was this all. The mounting wave of wage increases caused strong inflationary pressure which the government was no longer able to tackle with the old ruthlessness; it could no longer allow prices to surge ahead of wages or take recourse to a monetary reform which would slash the purchasing power of peasant cash holdings by two-thirds, as it was done in 1950. The result was an inadequately repressed inflation with black market prices soaring and

upward pressure on money wages continuing relentlessly and with the dictatorial government half resisting, half yielding—a policy which set the stage for the Poznan explosion of June, 1956, and which paved the way to October.

III. *October, 1956, and After*

It was shown in the earlier sections of this paper that the pattern which was imposed on the Polish economy of the early fifties reflected a remarkable unity of purpose on the part of its architects. The heretical ideas which began to bud shortly after Stalin's death and which surged to the fore three and a half years later represented an equally consistent and emphatic negation of this pattern. In refreshing distinction from the defenders of orthodoxy, the advocates of reform displayed a wide range of diverging views on a number of important subjects. But there seemed to be a solid area of agreement on fundamentals in the heady days of the "spring in October."

In the institutional sphere, there was a clear break with the Stalinist dogma of ever sharpening conflict between the socialist and nonsocialist components of the economy as well as with the supporting notion about the inherent inability of the small- and medium-size peasant farming to expand. Practically speaking, this meant abandonment of confiscatory taxation policies directed against private sector, as well as of drastic discrimination against it in the allocation of investment funds, and, most important of all, freedom to leave the collective farms.

In the field of economic administration, maintenance of central planning was overwhelmingly favored. Yet it was felt that its operation should be restricted to a relatively few decisions of broadly aggregative nature and to setting the output targets only for a limited number of key industries such as steel, machine building, and the like. Individual enterprises were to get more autonomy in their output and investment decisions which would now be taken with the active participation of the "workers' councils." The market was to receive more scope as the vehicle of allocation of resources and to serve as the only link between the urban and agricultural sector, with the compulsory deliveries to be abolished at the earliest possible date. A fundamental price reform, directed at making prices reflect relative scarcities, was put on the agenda.

On macroeconomic level, an equally radical reversal was envisaged. The planned rate of growth was to be scaled down and the disparity between increases in producers' goods and consumers' goods reduced, not merely as a temporary emergency measure, but as an inherent part of the new and more balanced development pattern. Concomitantly, the rate of investment was to be lowered and its allocation altered for years

to come: agriculture had to increase its share at the expense of industry, and within the latter more weight was to be given to coal, power, and basic chemicals at the expense of steel and engineering.

Such were, in broad outline, the major objectives which could be distilled out of official statements and of innumerable articles by leading economists. What about their fufillment?

A most fundamental change took place in the institutional sphere, with agriculture far in the lead. The number of collective farms fell by more than four-fifths within five months after October, and their portion in total agricultural share shrank to 1.2 per cent by the end of June, 1957.[20] (The state farms were not affected by this upheaval, except for a very minor reduction in their total area resulting from the sale of several hundred thousand hectares of land to the peasants). In the urban sector, the effects of new policy were less dramatic but nevertheless pronounced. The number of private artisan shops leaped upward by more than 40 per cent from 1956 to 1957, thus exceeding substantially its 1949 level,[21] and the revenues of the whole nonsocialized urban sector more than doubled during the same year.[22] It should be remembered, however, that this was an increase from a very low level.

The overcentralized system of economic administration proved most impervious to the new ideas. The most palpable innovations included reductions in the number of indicators (i.e., output targets and technological norms) in annual economic plans, deductions for the "fund of the enterprise" from the earned profits, right of individual plants to carry out replacements and major repairs out of their own means or out of credits rather than rely on budgetary grants. In addition, the organization of the so-called "industrial associations" which is now in progress aims at strengthening the position of industries with regard to the central planning agencies. A very small number of enterprises has been chosen to experiment in new and less centralized ways of management. The workers' councils which sprang up spontaneously in a number of major factories in the pre-October months are now in existence in almost all large-scale enterprises. Yet their position was weakened last spring when they became part of a broader structure called "conferences on workers' self-government," containing, besides the spokesmen of the councils, also representatives of the Party and of Party-controlled unions. Moreover, as a prominent Polish economist put it recently in an informal conversation, those workers' councils which took their rights to participate in management seriously were quick to find out that there was very little left for them to manage because all crucial decisions continued to be made outside the enterprise, in spite of the minor relaxations noted above. The promises of abolition

of compulsory deliveries were carried out only with regard to milk. A draft of price reform proposals containing an explicit (although none-too-consistent) recognition of the marginal-cost principle and of the importance of the rate of interest, was made public in December, 1957, by the advisory Economic Council (another institution of the post-October vintage). But no action on it has yet been taken.

The changes in over-all output and investment targets found their reflection, first of all, in the new draft of the Five Year Plan for the years 1956-60, with the over-all rate of growth scaled down to 8 per cent per annum with the rate of investment being on the average about 20 per cent and with substantial changes in the distribution of investment as shown in Tables 3 and 4. The new approach found its expression in the annual plans and in their actual fulfillment. A glance at Table 1 shows that the 1957 rate of investment was the lowest since 1951 (with exception of year 1956, when mounting economic and social tensions enforced a last-minute cut in investment below the originally planned level). Also, the allocation of investment in the plan for that year is indicative of the new orientation: the share of the nonsocialized sector was to double and the appropriations for coal and power were to rise by 2 and 8 per cent, respectively, while the total volume of planned investment was expected to remain unchanged.[23] In addition, there was apparently a drastic reduction in the volume of investment in armament industries.

The possibilities of appraising the over-all performance of the new setup are seriously limited by the fact that it has been in operation no more than for two years out of which only 1957 has thus far been fully reported. During that year, as our Table 1 shows, the net domestic product increased by nearly 8 per cent. The gross industrial output is known to have increased by 9.4 per cent. The signal feature consisted in an unusually good performance of the agriculture which for the first time reached, and slightly exceeded, its prewar harvest on the comparable territory.[24] No less if no more significant were such unmistakable signs of agricultural revival as sharp increases in prices of land, horses, and constructional material and a considerable rise in peasant savings. Yet on the opposite side of the ledger there were the following developments.

Powerful inflationary pressures which had broken through in 1956 continued to mount during 1957: they were propelled by continuing wage increases and rise in earnings of the peasantry, with increasing savings being an important but less than sufficient offset. The money income of the population in 1957 is known to have increased by 22 per cent over 1956[25] while the output, as has been pointed out a while ago, increased much less. The attempts to stem the inflationary tide by

stepping up imports of consumers' goods led to a growing deficit in the balance of trade which reached a record level of 119 million U.S. dollars in the first half of 1957.[26] According to the more recent information, the picture changed during the first eight months of 1958 when money wages were kept almost entirely stable while prices showed marked increases, primarily because of the switch to production of more expensive kinds of goods. In fact, for a number of consumers goods' industries this implied a switch from seller's market to buyer's market and a sharp increase in stocks. Such a development admittedly entailed a decline in real wages at least for some categories of workers. It is hard to say whether it will be possible for the Polish economic administration to hold out for long against the pressure for another round of wage increases. In other words, inflation is still lurking in the background, and this threat has been invoked more than once to justify the slow pace of economic decentralization—more specifically, to explain the postponement of price reform and the persistence of compulsory deliveries of grain and meat.

The rise of open as well as of the disguised nonagricultural unemployment began to cause concern in 1957. It represented a composite effect of several factors: such as economic decay of the small towns which had once been centers of small-scale industry and handicraft and which consequently suffered most in the period of ruthless drive against the "capitalist elements" in the pre-October period; difficulties in moving idle labor to the areas of labor scarcity owing to housing shortages in growing areas; interruptions in flow of raw materials and/or fuel supplies due to disproportions; reduction in labor requirements in new plants as they are beginning to "master the technique," to borrow a Soviet expression; near-constancy in the volume of state investment expenditures in the years 1953-57. According to official data, the number of registered unemployed attained its peak by the middle of 1957, when it reached the 100,000 mark and then declined abruptly.[27] The disguised unemployment is much larger and, apparently, more persistent. The official estimates for 1957 put it at 500,000 or roughly one-fifth of the total industrial labor force,[28] and Polish economists are outspoken in discussing its negative effects on incentives for efficient working and for continual improvement in technology.[29].

The enthusiasm of the October days has not been followed by the hoped-for break in the psychological attitude of workers. All defense mechanisms developed in response to the Stalin-type industrialization —high labor turnover, absenteeism, theft—continued to operate. Indeed, the weakening of the stick and lack of significant increase in the carrot led to further deterioration of labor discipline in the short run.

The situation in the countryside where the changes were much more tangible was, as we saw, quite different. Yet the same peasants who stepped up their buying of land and their rate of saving showed reluctance to acquire large quantities of agricultural machinery and to engage in construction for productive rather than personal purposes—an attitude which reflected, in all likelihood, the lingering fears that the collectivization drive may get under way once again. It is possible, besides, that difficulties to sell larger amounts of agricultural equipment were due, in part, to the fact that the standard types of this equipment, produced in Poland, had been adapted for use in large-scale state farms and Machine-Tractor Stations rather than for the needs of medium-sized peasant holdings—a point which was made recently by Professor Galbraith.[30]

IV. *Summary and Prospects*

The Polish economy after October, 1956, has undoubtedly some substantial achievements to its credit: maintenance of over-all rates of growth on respectable levels, pronounced improvements in agriculture. It is equally plain that the present Five Year Plan is a much more realistic document than its predecessor. The 8 per cent rate of growth and the 20 per cent rate of investment, while quite high, pass the Domar-Harrod consistency test much more successfully—particularly if it is remembered that the producers' goods capacity has greatly expanded in the preceding period. Moreover, the allocation of planned investment, showing the marked shift of emphasis to basic chemicals and to coal, is much more in line with the structure of comparative advantages. The same holds for the so-called "perspective plan of fifteen years 1961-75," which shows an even lower rate of growth and somewhat higher rate of investment. More important is that also the annual plans adopted and carried out thus far reflect this break with the old pattern.

But at the same time the Polish economy is continuing to pay for the extravagancies of the past. The inflationary pressure reflects another crisis of relocation, albeit with the opposite sign. It is easier to decompress the consumption than to increase the supply of consumers' goods just as it was simpler in the past to jack up the rate of planned accumulation than to adjust the capacity of the producers' goods industry to the required rate of expansion. The Polish economy experiences now, in different spots, shortages of capacity in capital-starved consumers' goods industries which sets limits to the increase of output also when the required raw materials are on hand. Inability to provide sufficient processing facilities for increased volume of foodstuffs coming from the villages or for imported cotton financed from the proceeds

of American loans are cases in point.[31] Another disproportion is even more serious: The increase in inadequate supplies of power, fuel, and chemicals requires an expansion in lines which are among the heaviest capital users in the economy and whose gestation periods are the longest. An ominous interaction between these two sets of difficulties is at work. By lifting the lids on consumption and by reducing elements of outright compulsion in labor-management relationship, the administration helps to raise the domestic claims on resources which are needed for export purposes and can even cause a temporary decline in their total availability. It is certainly not accidental that the output of coal showed a slight drop in 1957 when the use of prisoners and army personnel in the mines was abandoned and the amount of overtime work sharply curtailed, and that the coal exports kept declining. (There was an improvement in 1958, however.) It was equally clear that the pressure of growing consumption on imports was difficult to reconcile with the task of securing supplies of foreign equipment needed for rapid expansion of the neglected and most promising sectors of basic industries.

It is certainly important to bear in mind a point that has been stressed time and time again in the recent literature: The Polish economy after 1956 could, in a sense, take advantage, not only from solid achievements of the previous period, but also from its miscalculations. The post-October planners had at their disposal an impressive tail-end of investment projects which had been started during the early years of the Six Year Plan and which, while not completed on schedule, were nevertheless more or less substantially advanced toward completion. To the extent that the current constructional work represented a continuation of these projects, its capital requirements could be kept relatively low. The importance of this argument should not be exaggerated, however. First of all, in an economy which embarks on a significant change in the direction of its development, some of the unfinished projects which reflected the priorities of the past would not necessarily be the most useful ones. Secondly, and more important, to the extent that such tail-ends could fit into new plans, they could compensate only in part for the decline in reserves which the planners of the earlier period had at their disposal and which they used to the hilt. The old method of expansion owed a lot to the possibility of crowding raw manpower of the surplus peasants into existing plant which was, to a considerable extent, obsolete and undermaintained already at the beginning of the Six Year Plan. By now, this policy has exhausted its potentialities and could not be pressed forward without causing serious disruption at the industrial as well as at the agricultural end. No doubt, as was shown in preceding section, substantial pockets of unemployment (open as

well as disguised) are still present, although the incidence of this unemployment has now changed. But in order to deal with them, it would be necessary to do something about the shortage of housing in vast regions of the country as well as about shortages of raw material and (in spots) of productive capacity; and every determined move in that direction would inevitably require heavy capital outlays. Here again, a determined application of the "dual economy" strategy could help. But while the leaders of the post-October administration abandoned the Stalinist approach to this problem, they were not ready to move beyond a merely permissive attitude toward the activities of the private sector in the area of small-scale urban and agricultural economy, and remained apprehensive about its possible degeneration.

It might be objected that the situation may be hopeless but not serious, after all. As long as the total output is growing at a respectable rate and the investment keeps adding to capacity in a less lopsided way than before, the process of relocation will be over before long, and Poland will finally get on the escalator of balanced growth; in the meanwhile, a measure of repressed inflation is something to live with. The trouble consists in the possibility that some of the short-term troubles might grow more serious before the salutary long-term effects would set in.

The gap in the balance of trade can become even more disturbing, particularly if foreign loans should not be forthcoming in anything like an adequate volume. The paralyzing effect of inflationary pressures on attempts toward decentralization and price reform is bound to weaken the incentives for better allocation of resources and for their efficient use in a period when idle labor and capacity margins can no longer be counted on to soften the impact of the massive irrationalities of the bureaucratic planning and to prevent the capital/output-ratio from becoming too high. The unchanged attitude of industrial workers toward production remains a source of serious concern. While the situation in agriculture seems very much better in this respect and a certain "from Missouri" approach with regard to investment in productive facilities may give way if the fears of another collectivization wave will be effectively dissipated, major question marks still remain. It is hard to feel certain that before the relocation process will be successfully completed, the peasants will keep providing marketable surpluses sufficient to guarantee the steady growth in real wages and at the same time practice the necessary degree of wise restraint in spending or accept without serious resistance the appropriate taxation policies. Last but not least, as long as disturbances and hitches are likely to develop, there is always a chance that die-hards of unreconstructed (or partially reconstructed) Stalinism may attempt to step in and to turn the clock back. The Poles are reported to be saying, "How terrible is the past

that awaits us." We should hope that this would remain merely a sad joke; but we cannot be entirely sure.

FOOTNOTES:

[1] *Rocznik Statystyczny 1957* (Warsaw, 1957), p. 61.

[2] *Ibid.*, pp. 124 and 138.

[3] A lucid description of the administrative setup of the Polish economy in the early fifties can be found in Thad P. Alton's *Polish Postwar Economy* (New York, 1955). For a full discussion of the Polish price system, cf. John M. Montias, "Price-setting Problems in the Polish Economy," *J.P.E.*, Dec., 1957, pp. 486-505, and his unpublished Ph.D. dissertation, "Producers' Prices in a Centralized Economy: the Polish Experience" (1958; on deposit at the Business Library of Columbia University).

[4] The major criticisms made in the discussion of the official index could be summed up as follows: (1) the so-called "1950 prices" were, in fact, only slightly refurbished 1937 prices which imparted an exaggeratedly high weight to the industrial products owing to the strong monopolistic elements in the prewar Polish industry; (2) new machinery and chemical products whose output was growing particularly fast were introduced into index at prices which, to cite a recognized authority, "were as a rule unduly high as compared with prices of other products" (H. Fiszel, *Prawo wartosci a problematyka cen w gospodarce socjalistycznej* [Warsaw, 1956], p. 179); (3) the development of interplant specialization and of subcontracting led to an increase in extent of double counting in the gross value index over the period under review; (4) no allowance was made for drastic deterioration in quality of consumers goods over the period under consideration; (5) virtual disappearance of private small-scale industry and of handicraft was reflected only to a very insignificant extent. It is not surprising, in view of all this, that the post-1956 statistical abstracts have quietly dropped the old gross value index of Polish industrial output while *Voprosy ekonomiki*, one of the leading Soviet economic periodicals, displayed it proudly as late as May, 1957.

[5] A similar argument emphasizing the similarities between the early stage of Soviet-type industrialization and the Western war economy was made by Oskar Lange in his Belgrade lectures, given in November, 1957, and published subsequently in Poland. Cf. his "Rola planowania w krajach socjalistycznych," *Sprawy miedzynarodowe*, Feb., 1958, pp. 21-24.

[6] The picture shown by Table 1 should be undoubtedly taken with a grain of salt. On the one hand, it would tend to overstate the extent of disparities since the upward bias in the official index of metal processing industries was (for reasons indicated in the footnote 4) much larger than in the basic materials' index. On the other hand, however, the comparison between the all-industrial index and the electric power index would not tell the whole story because industries which are the heaviest consumers of power (engineering, chemicals, quality steels) expanded much faster than others; and while the output of power more than doubled, the capacity of power plants increased by less than 60 per cent—a clear indication of the very high pressure under which these plants were operating.

[7] *Maly Rocznik Statystyczny 1958* (Warsaw, 1958), p. 46.

[8] In order to get a clearer notion of the supply of capital goods to agriculture, it may be worth noting that the value of the output of agricultural machinery accounted in 1950 for one-half of 1 per cent of the total value of Polish producers' goods industry in the same year (*Zycie Gospodarcze*, Nov. 11, 1956), and that the small-scale industry and handicrafts from which the prewar Polish peasants derived a large part of their equipment was reduced to utter insignificance by that time.

[9] A. Szerwentke, "Wykonanie 6-letniego planu inwestycyjnego—Proba oceny i wnioski," *Gospodarka Planowa*, Jan. 1957, p. 15.

[10] *Rocznik* . . ., p. 130.

[11] F. Blinowski, "Okształtowaniu sie stopy zyciowej w Planie Szescioletnim," *Nowe Drogi*, Feb., 1956, pp. 11-33.

[12] For an able summary, cf. the already quoted article by Montias.

[13] "O dorazny program gospodarczy," *Zycie Gospodarcze*, July 16, 1956.

[14] I am borrowing this expression from Adolph Lowe.

[15] It could, of course, be pointed out that the capital/output ratio might decline over time as a result of technological progress. But not every technological progress leads to a decline in capital/output ratio particularly when it is paralleled by a shift of investment toward more highly capital consuming lines of industrial production and when it occurs in a way which taxes the capacity of the economy to the limit—a point about which we shall have more to say presently.

[16] The point about autarky as a price paid for excessive rate of investment was made most tellingly by Michal Kalecki in his article, "Czynniki Okreslające tempo wzrostu dochodu narodowego w gospodarce socjalistycznej," *Gospodarka Planowa*, Aug., 1958, pp. 1-5. Another way in which such a rate of investment pushes up the capital/output ratio consists, in his view, in lengthening of construction period of new plant as a result of shortage of technical organizational personnel. A glance at the Table 1 of our appendix suggests yet another example of the same kind. The unusually high share of "increase in stocks" in total investment reflects, as a fairly orthodox Polish economist put it recently, "a smaller degree of stabilization of the economic processes in a faster growing economy"—a rather conservative way of describing the waste which is due to difficulties in selling wretchedly poor products, on the one hand, and to the managers' propensity to hoard materials in view of uncertain nature of the supply flows in a shortage-ridden economy, on the other. Cf. M. Rakowski, "O tempie wzrostu gospodarki w planie perspektywicznym," *ibid.*, Oct., 1958, p. 31.

[17] To be sure, this "corner-cutting" was only in part a deliberate strategy; to a large extent it represented merely a way of plugging unexpected gaps which kept arising here and there as a result of general hypertension.

[18] "It is being said and written that Comrade Minc [Minister of the Industry, and first Chairman of the State Commission for Economic Planning] was the author of the first version of the plan, of the good plan. Only later another plan was imposed whose author was not Minc. Who imposed it? The friends did." (Speech by B. Ruminski at the VIIIth plenum of the Central Committee of the Polish United Workers' [Communist] Party, *Nowe Drogi*, Oct., 1956, p. 70. The term "friends" represents usual tongue-in-cheek reference to the Soviet Union.) For a very helpful analysis of the two drafts, cf. Alton, *op. cit.*, pp. 116-117.

[19] According to S. Jedrychowski, the present chairman of the State Planning Commission, investment in the armament industries in the years 1951-55 absorbed 11 per cent of the total investment allocated to industry. Cf. "The Polish Economy since 1950," *U. N. Economic Bulletin for Europe*, Nov., 1957, p. 26.

[20] *Maly Rocznik . . .*, p. 45.

[21] *Ibid.*, p. 39.

[22] I. Chodak, "W sprawie roli i znaczenia gospodarki nieuspołecznionej w naszym systemie gospodarczym," *Gospodarka Planowa*, Jan., 1958, p. 16.

[23] A Szerwentke, "Plan inwestycyjny na rok 1947," *Gospodarka Planowa*, Feb., 1957, p. 10.

[24] *Maly Rocznik . . .*, p. 46.

[25] "Sytuacja gospodarcza kraju a zadania czwartego kwartalu" (editorial), *Gospodarka Planowa*, Oct., 1958, pp. 3-4.

[26] "The Polish Economy . . .," p. 36.

[27] *U. N. Economic Survey of Europe in 1957* (Geneva, 1958), Chap. VII, p. 45.

[28] *Ibid.*, p. 48.

[29] Cf. M. Kabaj, "Problemy pelnego zatrudnienia (II)," *Zycie Gospodarcze*, June 20, 1958, p. 2.

[30] *Journey to Poland and Yugoslavia* (Cambridge, 1958), p. 45.

[31] A. Karpinski, *Zagadnienia socjalistycznej industrializacji Polski* (Warsaw, 1958), p. 20. The last point, needless to add, constitutes not a deprecation of American loans but an argument in favor of increase in their volume in order to enable the Polish economy to import adequate quantities of cotton and of cotton-processing machinery.

APPENDIX

TABLE 1

NATIONAL INCOME AND PRODUCT OF POLAND, 1949 TO 1957

	1949	1950	1951	1952	1953	1954	1955	1956	1957
1. Index (1949=100)*									
Net national product	100.0	115.1	123.7	131.4	145.1	160.4	173.5	188.2	203.3
Net national income	100.0	115.3	124.0	131.8	145.7	161.0	175.2	188.4	213.5
2. Breakdown by Use (Percent of Total income)†									
Consumption	84.4	79.3	79.7	77.2	72.1	76.8	77.8	79.8	78.7
Individual	79.3	74.5	74.4	72.5	67.9	72.2	72.2	74.5	73.8
Social	5.1	4.8	5.3	4.7	4.2	4.6	5.6	5.3	4.9
Net investment	15.6	20.7	20.3	22.8	27.9	23.2	22.2	20.2	21.3
Accumulation:									
Net fixed investment	11.4	13.4	13.8	15.5	16.7	16.1	15.4	14.6	13.7
Increase in stocks	4.2	7.3	6.5	7.3	11.2	7.1	6.8	5.6	7.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Chain index: 1950 prices for 1949–55, 1956 prices for 1955–57.
† In 1956 prices.
SOURCE: *Maly Rocznik Statystyczny 1958*, pages 14 and 17.

TABLE 2

GROSS INDUSTRIAL AND AGRICULTURAL OUTPUT, 1949 TO 1955*

	1955
All industry (1949=100)	270
Electric power	224
Mining	130
Metallurgy	251
Engineering and metalworking	421
Chemicals	308
Textiles	204
Food processing	229

	1955
Total agricultural production (1949–50=100)	112
Gross plant production	108
Gross animal production	123

* In 1938 prices.
SOURCE: "The Polish Economy Since 1950," *U.N. Economic Bulletin for Europe*, November, 1957, pages 28 and 44.

TABLE 3

PERCENTAGE DISTRIBUTION OF GROSS FIXED INVESTMENT BEFORE AND AFTER 1956

	1950–55 Actual	1956–60 Planned
Industry	46.3	39.7
Construction	3.5	2.7
Agriculture	9.6	18.4
Forestry	0.4	0.5
Transportation and communication	12.2	9.2
Trade	3.5	2.6
Local government	3.2	3.1
Housing	10.4	16.2
Culture and social welfare	5.3	6.1
Administration and other	5.6	1.5
Total	100.0	100.0

SOURCES: 1950–55, A. Szerwentke, "Wykonanie . . . ," page 15; 1956–60, K. Secomski, "Z problematyki planu 5-letniego," *Gospodarka Planowa*, September, 1957, page 7.

TABLE 4

PERCENTAGE DISTRIBUTION OF INVESTMENT IN INDUSTRY BEFORE AND AFTER 1956

	1950–55 Actual	1956–60 Planned
All industry	100.0	100.0
Fuel	18.0	21.9
Electric power	9.7	13.1
Metallurgy	20.9	13.1
Engineering	17.4	8.3
Basic chemicals	12.5	13.1
Building materials	5.8	8.8
Textile industry	3.7	12.3 (Textile industry, Food processing and Other light industry combined)
Food processing	5.9	
Other light industry	1.8	

SOURCE: A. Karpinski, *Zagadnienia socjalistycznej industrializacji Polski* (Warsaw, 1958), pages 74 and 79–80.

ECONOMIC INTEGRATION IN THE EUROPEAN SOVIET BLOC?

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I

I insist on the question mark in the title. We must ask whether what goes on in the European Soviet bloc amounts to integration; and before we can answer that, we must decide what integration in general might mean.

A collection of eight economies,[1] including the second largest industrial power in the world, is necessarily a complicated phenomenon. Fortunately, the complexities have been admirably summarized by our colleagues,[2] so that we can here consider only a few simple and basic facts. Let me pull from their works a handful of elementary facts, and see what they do to our problem:

1. Of none of these countries can we say that when the amount demanded exceeds the amount supplied, price tends to rise. Most prices are fixed by administrative action and tend to vary only at irregular and sometimes long intervals. There is every reason to suppose that the nonfixed prices are influenced by the fixed prices.

2. There is no reason to suppose that the price structure in any two bloc countries is the same, and a good deal of reason to suppose that in each country the price structure is different from that in the free world.

3. The levels of prices in the individual countries have moved differently. In the USSR, prices were doubled in 1949 and were gradually reduced until 1954, when they were stabilized. Satellite prices certainly rose from 1949 until about 1952 or 1953 (at which time the currency systems of most of them had to be replaced). Since that time we cannot say for sure, but through 1956, at least, wages tended to rise more rapidly than labor productivity, so that prices probably continued to rise there. We have no basis for saying that they have changed on the same dates or in the same proportions in the individual satellites.

4. Each country has a fixed exchange rate and, as far as we know, indulges in fewer multiple rate practices than most free world countries. These exchange rates, however, seem to have little or nothing to do with "purchasing power parities," if I may be permitted this phrase.

5. Most of the trade of each bloc country is with other bloc countries. Apart from unilateral payments—notably reparations to the USSR by the former Axis allies—there have been few items in the

[1] This and all other footnotes appear at the end of this paper.

balance of payments other than trade. Credit, in particular, seems very small.

6. When a pair of countries trades, it does so on the basis of a fictitious currency—the "clearing ruble"—and a set of fictitious prices—"world prices of 1950." The fictitious currency is necessary because only the Soviet Union has any gold, and nobody has any appreciable amount of transferable foreign exchange. The prices are fictitious in the sense that some of them have no connection to world prices but are determined by what, for lack of a better term, we may call "political considerations"; and none of them has any particular connection with prices existing within any of the trading countries.

7. For the foregoing reasons, through 1957 virtually all payments within the European Soviet bloc had to balance bilaterally. In 1957, the bloc approved a plan for multilateral payments, but I have no indication that this plan is yet in operation.

8. The countries of the European Soviet bloc all talk of being an economic unit, which they describe as the "camp of socialism." They speak of co-ordinating their industrialization plans, of international division of labor, of specialization within the bloc, of international allocations of scarce commodities and resources, and of the overwhelming importance of intrabloc trade to the individual members of the bloc. Our basic analytical problem is to decide whether this last feature of bloc economics is compatible with the first seven.

II

If this set of relationships amounts to integration in any accepted sense, the European Soviet Bloc is integrated. If not, only terminological problems of a sort already too common in economics will be created by using the term "integrated" to describe the region. Let us first see what is usually meant by integrated.

1. A purely competitive economy consists of a set of markets. A market consists of buyers and sellers who engage in bidding for and offering goods, with the result that a single price is reached for all transactions, this price equalizes the amounts of goods offered for sale and bid for, and the existence of any other price will activate a mechanism tending to restore this equilibrium price.

A theorem by Lange[3] states that "any goods the prices of which always vary in the same proportion can be combined into one composite good; and conversely, any good can be split into an arbitrary number of separate goods with prices varying always in the same proportion." An economy is a set of prices and a set of excess demand functions in these prices. Knowing the prices at which the excess demand functions

all vanish, it is possible to determine equilibrium quantities of output and exchange.

An international economy is a closed system, in which there are two kinds of goods. An internationally traded good is a composite good: for any price P_{ij} of good i in country j there exists another price P_{km} in country m such that P_{ij}/P_{km} is a constant called the exchange rate. For such commodities the excess demand function must equal zero for the group of countries, but not for the individual country. A domestic good, with price P_{ij}, is one such that for no other price $P_{km} (m \neq j)$ is the ratio P_{ij}/P_{km} constant. For domestic commodities, excess demand functions must equal zero within the confines of a single country.

An integrated international economy is one in which all commodities are internationally traded. It may chance, of course, that there is no trade in certain commodities in an integrated international economy. A group of countries on the gold standard under conditions where "Palmer's rule" would be applicable[4] are, in traditional terminology, in equilibrium when the central banks are neither buying nor selling gold or foreign exchange.[5]

Transportation costs, tariffs, and immigration laws have always meant the existence of some domestic goods for each country; and there have always been goods internationally traded within a group of countries but not over the entire world. Since the devaluations of 1949, there has been a recurrent problem in European economic policy: Should a country whose balance-of-payments position improves relax its restrictions on trade with other soft-currency areas or those on trade with hard-currency areas? The first policy increases the number of goods traded internationally within Europe; the second the (considerably smaller) number of goods traded internationally in the area including Europe and the dollar countries. Which policy increases economic integration more? "Degree of integration" is only a partial ordering of the possibilities.

With some modification, this reasoning may be applied to the case where each country has pure competition internally but has foreign trading in the hands of a monopoly. Then if a monopoly buys a in country i and sells b in country j, it will maximize profits when the price ratio

$$\frac{P_{ai}}{P_{bj}} = \frac{1 - \dfrac{1}{e_{bj}}}{1 - \dfrac{1}{e_{ai}}}$$

where the e are the elasticities of the internal excess demand function. If these are constant within the relevant range of price variation, or if their variations are the same, this price ratio will be constant, and by Lange's theorem, a and b are a single, internationally traded commodity, even though the price ratio would not equal the exchange rate.

Some clarification of the Soviet bloc problem occurs if it is assumed that the monopoly arrangement just described involves a set of monopolies, one for each country. For then it could well be to the collective interest of the foreign traders to set their prices in such a way as to maximize the total profit arising from foreign trading operations, and to regard the division of these profits among themselves as a secondary problem, to be resolved with clearing ruble accounting techniques. An individual monopoly might be satisfied with the general level of prices in the various countries and still be dissatisfied with the results of bargaining with the other national monopolies.

2. It is often argued that it is permissible to argue from premises of doubtful empirical validity in order to obtain verifiable conclusions; and that as long as the evidence is consistent with these conclusions, the premises may continue to be useful.[6] If so, the difference between Soviet bloc institutional arrangements and those assumed in the foregoing discussion need not invalidate the results there summarized. If the operations of a group of Soviet-type economies may be approximated by standard models of market economies, then, if their internal price structures move in similar patterns, they are integrated, but otherwise not.

Two sorts of evidence apply to this problem. The first would associate the behavior of the Soviet bloc countries with other economies whose internal structure is better understood. The second would make some direct observation of a general sort about the bloc countries themselves.

In Western Europe and Asia in the period since 1945, exchange controls have limited exports to countries with high internal prices and imports from countries with low internal prices. These restrictions have existed because of the liquidity problems of central banks and have prevented movements of goods which would otherwise have tended to reduce these price differentials. The elimination of exchange controls has taken place either as a result of internal deflation or as a result of exchange rate changes. The first general manifestation of this sort in Europe was the establishment of multilateral clearing through the European Payments Union beginning in 1950.[7] It is generally held that multilateralization of intra-European settlements has increased the amount of integration.

On the hypothesis that trade in Eastern Europe may be analyzed in

much the same way as trade (say) in Western Europe, then by 1957 the East European countries had reached a degree of integration which the Western European countries had reached seven years earlier; it is generally conceded that at present Western Europe is far more integrated than it was in 1950, although less integrated than in 1929 or in 1910.

Direct evidence that the price structures of East European countries are now closer than formerly is lacking. It is known, however, that Soviet internal wholesale prices roughly doubled in 1949 and were reduced from the new high levels from then until about 1954. On the other hand, satellite internal wholesale prices certainly rose until after their currency conversions (which ranged from October, 1950, in Poland until June, 1953, in Czechoslovakia). Their money wage levels, moreover, have certainly risen steadily[8] and, in the main, more rapidly than labor productivity, through 1956. There is thus evidence that Soviet prices moved, in the main, in the opposite direction from satellite prices, at least from 1950 to 1956, which is hardly proof that integration was a fact.

By standards of market economies, the Soviet bloc is not integrated. However, its members trade extensively, talk freely of co-ordinating their economy policies,[9] and in general act as if there existed a form of mutual interdependence. It would seem, then, that the concept of integration will mislead the user. To suggest a meaningful definition of interdependence, it is necessary to consider an economic system in which there is no single price for all transactions, demand does not necessarily equal supply at any price, and there is no price mechanism.[10]

III

Soviet bloc internal prices are set by administrative action, and may remain unchanged for long periods. Moreover, the price in any transaction depends in part upon the identities of the buyers and sellers and in part upon the quantities bought or sold by each.[11] Finally, enterprises seek to maximize output (subject to profits not falling below a stated sum, called "planned profits") rather than profits. A model for such a system is sketched below.

1. For any transactor, the marginal cost (revenue) from the purchase (sale) of an item is assumed to depend on the number of items purchased. If $p(x)$ is the marginal cost of the x'th unit for a continuous function, total expenditures on the acquisition of x items is

$$\int_0^x p(z)dz.$$

Ordinarily for administrative reasons, $p(x)$ is constant on intervals of

x, with finite discontinuities (or steps) at one or more points, and we replace this integral by a Stieltjes integral

$$\int_{z \leq x} dp(z).$$

These two formulations give the market price system as a special case, in which all purchases are made at the same price ($p(z)$ is a constant), so that marginal cost equals average cost, and that total expenditure equals price times quantity:

$$\int_{z \leq x} dp(z) = \int_0^x p dz = px.$$

If the economy consists of transactors 1, 2, . . . , m then it may be that each pair of transactors has its own set of price rules. Thus the total expenditures of the i'th transactor in its purchases from the j'th transactor are governed by a unique marginal cost function $p_{ij}(z)$. Then if x_{ij} units are actually purchased, the value of sales of the i'th to the j'th transactor will be denoted by

$$W_{ij}(x_{ij}) = \int_{z \leq x_{ij}} dp_{ij}(z).$$

In the step-functions $p(x)$ representing the rates of marginal cost (revenue), the set of values $p(x)$ will be assumed to be either nondecreasing or nonincreasing functions of quantity (x) and will be called the "price rule"; the values of x at which discontinuities (steps) in $p(x)$ occur will be called "plans," on the empirical grounds that changes in rates of marginal revenue or cost occur at the point where indices contained in official documents called "economic plans" are attained.[12] The set of parameters consisting of both price rules and plans defines the expenditure function $W_{ij}(x_{ij})$ and will be called a "control system."

2. It is assumed (in order to simplify the exposition) that the economy consists of enterprises each seeking to maximize output of a single product subject to the restraint that costs may not exceed revenues (subsidy or "planned" profits may be included as a cost). Thus the problem is to maximize

$$x(y_1, \cdots, y_n) - \lambda \left[\int_{z \leq x} dp(z) = \sum_{i=1}^{n} \int_{z \leq y_i} dw_i(z) \right] \tag{1}$$

where x is the quantity produced, y_i the quantity of the i'th input, $p(z)$ and $w_i(z)$ the respective marginal revenue (cost) systems, and λ a Lagrange multiplier. Replacing the integrals of the marginal cost functions by expenditure functions, we have

$$x(y_1, \cdots, y_n) - \lambda \left[W(x) - \sum_{1}^{n} W_i(y_i) \right] \tag{1a}$$

which yields as equilibrium conditions,

$$0 = x_i - \lambda(W'x_i - W_i') \qquad (i = 1, \cdots, n)$$

and substituting

$$W' = p(x) \quad \text{and} \quad W_i' = w_i(y_i)$$

$$(2) \qquad \frac{1}{\lambda} = \frac{p(x)x_i - w_i(y_i)}{x_i} \qquad (i = 1, \cdots, n).$$

In this expression, $p(x)x_i$ is the revenue obtained from the sale of the output of the marginal unit of the i'th input, $w_i(y_i)$ is the cost of this output, and x_i the amount of the output. Thus this condition means that enterprises employ factors of production in such a way as to equalize the losses incurred from hiring a marginal unit of each input. These being functions of marginal productivities and of the control systems, it is possible (except perhaps at points of discontinuity in the price rules) to determine the effect on output of changes either in plans or in price rules. Space does not permit an examination of this question here.

3. These conditions form a general equilibrium system for an economy of n enterprises, with n revenue equations of the form of (1a). (These conditions imply merely that costs equal revenue at the equilibrium level of output.)

$$(6) \qquad \begin{aligned} 0 &= w_1(\textstyle\sum x_{j1}) - w_{12}(x_{12}) - w_{13}(x_{13}) - \cdots - w_{1n}(x_{1n}) \\ 0 &= -w_{21}(x_{21}) + w_2(\textstyle\sum x_{j2}) - w_{23}(x_{23}) - \cdots - w_{2n}(x_{2n}) \\ &\cdots\cdots\cdots\cdots\cdots\cdots \\ 0 &= -w_{n1}(x_{n1}) - w_{n2}(x_{n2}) - w_{n3}(x_{n3}) - \cdots + w_n(\textstyle\sum x_{jn}). \end{aligned}$$

Walras' Law applies here, in the sense that $w_i(\Sigma_j x_{ji}) = \Sigma_j w_{ji}(x_{ji})$, revenue of one enterprise being earned from sales to other enterprises. One of these equations is thus redundant and may be replaced by the monetary definition

$$\int_{z \leq x_{ni}} dp_{ni}(z) = \int_0^{x_{ni}} dz = x_{ni} \qquad (i = 1, \cdots, n).$$

These equations are now n in number; to them may be added n^2-n equilibrium equations of type (2), making a total of n^2. They may be solved for the n^2 quantities (the x_{ij} and Σx_{ij}). This system, then, if it possesses a solution (marginal costs and revenues such as to yield nonnegative total quantities), a problem which cannot be treated in the space available, yields a determinate set of (equilibrium) outputs.

4. The general equilibrium system just presented can now be discussed in terms of "industry," which is the equivalent of "commodity" in a market economy. The distinction between domestic and interna-

tional industries should then follow along lines analogous to those domestic and international commodities in market economies. A set of enterprises forms an industry when all their transactions are subject to the same price rules. The expenditure functions are the integrals of step-functions and can be written out and added together as follows:

If enterprise 1, . . ., r form an industry, the sales of the i'th enterprise to any j'th enterprise ($i = 1, \ldots, n, n \geq r$) are denoted by

$$W_{ij}(x_{ij}) = \int_{z \leq x_{ij}} dw_{ij}(z)$$

$$x_{k_i,j} = \sum_{k_i=1}^{s_i} (x_{k_i-1,j}) p_{k_ij}, \text{ where}$$

$x_{k_i,j}$ are equal to $\begin{cases} 0 \text{ for } k_i = 0 \text{ (by convention)} \\ \text{the plans of the enterprise, for } 0 < k_i < s_i, \text{ actual sales } x_{ij}, \\ \text{for } k_i = s_i \end{cases}$

$p_{k_i,j}$ are the price rules governing transactions between i and j.

For the industry, enterprises are summed over i in the following way:

$$\sum_{i=1}^{r}\left[\sum_{k_i=1}^{s_i} (x_{k_i,j} - x_{k_i-1,j}) p_{k,j}\right] = \sum_{k_i=1}^{s_i}\left[\sum_{i=1}^{r} (x_{k_i,j} - x_{k_i-1,j}) p_{k_ij}\right].$$

Since all enterprises have the same price rules, this simplifies to

$$= \sum_{k_i=1}^{s_i}\left[\left(\sum_{i=1}^{r} X_{k_i,j} - \sum_{i=1}^{r} x_{k_i-1,j}\right) p_{kj}\right].$$

Let X_k be defined as

$$\sum_{i=1}^{r} X_{k_i,j}, \text{ so that } \begin{cases} X_0 = 0 \text{ (by convention)} \\ X_k = \text{the industry plans for } 0 < k < s_i \\ X_s = \text{actual sales to } j \text{ by the industry.} \end{cases}$$

Then this sum may be replaced by the industry expenditure function

$$= \sum_{k=1}^{s} (X_k - X_{k-1}) p_{kj} = \int_{z \leq X_{sj}} dp_{sj}(z)$$

will be the expenditure function of the j'th enterprise with respect to purchases from the s'th industry (which consists of enterprises 1, . . . , r). For all of these enterprises (and thus for the industry) equilibrium conditions (1) and (2) will then be the same. Equations for enterprises in the same industry can thus be combined in (6), reducing correspondingly the number of equations in this system; and eliminating as redundant a corresponding number of the equilibrium conditions.

Our great problem in understanding the operations of the Soviet-

type economy is the difficulty we have in understanding what is meant by equilibrium in a system where prices are arbitrarily fixed by administrative action. Here we have assumed that the prices are given in a completely arbitrary manner, with the proviso that what the enterprise is not allowed to spend it pays as taxes; and also that these prices are supplemented by direct controls which mean that producers and consumers can buy only stated amounts at stated prices. Finally, it has been said that the enterprise in the Soviet bloc (as everyone knows) is not concerned with profit maximization but rather with meeting production plans. From these premises, it has seemed possible to demonstrate the conditions for equilibrium in the economy as a whole and to specify the economic connection between output, the plans, and the price rules. Moreover, this system does not assume that the economic plans are either fulfilled or not fulfilled; it states that enterprises are as much influenced by the plans as by anything else but that they must take into account their own production functions and price rules as well. One advantage of this formulation is that the economic plans fit as precisely into the constraints facing the producers and consumers as do the prices.

Having considered what determines the output of particular industries in an individual bloc country, we are now in a position to consider international trade, which is the connection existing among two or more economies. Just as the theory of international trade is an extension of the theory of a market economy, so, for the Soviet bloc, international trade can be readily introduced into the type of economy we have just considered.

5. An international system of planned economies is a closed system of industries, consisting of the cost identities (6) and the equilibrium conditions (4) and (5). If any one industry had enterprises in several countries, the system would not be international but one supernational economy. Each Soviet bloc country maintains its own monetary and control systems, however, so that the area is a group of economies, not a single economy.

An international transaction involves a foreign exchange transaction. In the general case (multiple exchange rate),[18] it would be necessary, if something produced in country A is to be "the same product" as something else produced in country B, that if A purchases a quantity of these goods from B and resells them to C, it will receive the same revenue as it would have selling the same amount of its own product. Thus if B produces i and A produces j, if

$$\left[\int_{z \leq x_{AB}} dw_{AB}(z)\right] = W_{AB}(x_{AB})$$

is the cost of the i to A, if

$$\int_{z \leq W_{AB}(x_{AB})} dw_{CA}(z)$$

is the foreign exchange earned from the resale of this item to C, and if

$$\int_{z \leq x_{CA}} dw'_{CA}(z)$$

the foreign exchange earned from the sale of A's own output, then A, B, C have interdependent industries whenever

$$\int_{z \leq x_{CA}} dw_{CA}(z) = \int_{z \leq W_{AB}(x_{AB})} dw'_{CA}(z)$$

whenever $x_{CA} = x_{AB}$ and thus A and B produce the same products.[14] The definition is only a partial ordering, like the definition of integration in a market system. Internal price rules of A need not have any particular connection with those of B, and prices need not vary in the establishment of any equilibrium. The clearing ruble price rules must be the same for all countries with an international industry. Given arbitrary administrative decisions as to plans and price rules, the economy of the group of countries will reach equilibrium levels of trade—not necessarily in planned amounts, though the amounts are influenced by the plans. (It does not matter either whether the plans are made by a single bloc-wide agency or by national agencies. Of course, deviations of output from plans will not necessarily be the same in the two cases.)

For bloc-wide interdependence there must be bloc-wide interdependent industries. There have been several important steps in this direction: (1) The establishment of the clearing ruble in 1950, even though this ruble was at the time in no sense an "international currency." (2) The admission of the principle of single prices for exporting countries in 1954. (3) The admission of world prices as a principle for all pricing in 1955 (however honored in the breach). (4) The approval, in principle, of multilateral clearings in 1957 (although this principle may still be similarly honored). Thus, even though movements in internal prices may have been discordant, it is possible, within a model of planned economies, to assert that interdependence has increased.

The important consideration in this analysis is not that the Soviet Union dominates the system. If the satellites were incorporated into the Soviet monetary and price systems, the area would form a single economy. When we say that the Soviet Union dominates the plans of the individual countries, we have not specified all that needs to be said. The constraints facing individual producer and consumer in the bloc consist only in part of plans. In addition they include the various price rules

in existence and the individual production functions. Alteration of plans will affect the composition of output and international trade; so will alterations in the price rules. As long as the internal prices are independently set, interdependence in the bloc can increase only through the unification of the system of clearing ruble prices. But if such unification proceeds, as it has, then interdependence in a meaningful sense can increase. This interdependence is not meaningful within the customary definitions of integration, for it is inconceivable in a market economy that there should be one set of international prices and another set of internal prices. There is no ready way of explaining how such a situation can exist within the ordinary analytical framework, and in the terminology of "positive economics," we will be led to wrong predictions if we retain the customary model to help analyze the European Soviet bloc.

IV

Thus the conclusion of this paper may be simply stated. By the criteria of ordinary market analysis, the Soviet bloc was a heterogeneous collection of national bilateral barter arrangements prior to 1957; in 1958 it was about as integrated as Western Europe was in 1949—which is not saying much; it is not possible to say why one volume of goods would be traded within the bloc rather than any other, the matter resting with murky ideologists, capricious bureaucrats, and immutable technologies.

This criterion fails because it does not start from premises appropriate to Soviet bloc conditions. A restatement of equilibruim conditions, plans, and price controls yields a different (if tentative) formulation of equilibrium which would explain the volume of output and trade within the bloc and produce as by-product a concept of international interdependence which would not lead the observer accustomed to market economies into a gross error such as that implied by the preceding paragraph.

FOOTNOTES:

[1] Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, the USSR.

[2] Documentation of this summary will cover only points not generally stressed in the available literature among which should certainly be cited the following works. N. Spulber, *The Economics of Communist Eastern Europe* (New York, 1957), contains a large body of background material on this subject. N. Spulber and F. Gehrels, "The Operation of Trade within the Soviet Bloc," *Rev. of Econ. and Statis.*, May, 1958, p. 140, contains a useful summary of the most recent information on the subject, supplementing and correcting (see their footnote 12) my own review, "International Trade without Markets," *A.E.R.*, Dec., 1954, p. 791. The relation between the commodity patterns of trade and development are discussed in D. Granick, "The Pattern of Foreign Trade in Eastern Europe and its Relation to Economic Development Policy," *Q.J.E.*, Aug., 1954, p. 377. See also the papers by Spulber and Granick in *Resources and Planning in Eastern Europe*, N. J. G. Pounds and N. Spulber, ed. (Indiana Univ. Publications, Slavic and East European Series, No. 4, 1957), and the forthcoming study by Jan Wszelaki, *Communist Economic Strategy: The Role of East-Central Europe* (Nat. Plan. Asso., 1959).

[3] Oskar Lange, *Price Flexibility and Employment* (Bloomington, Ind., 1944), p. 106.

[4] J. Viner, *Studies in the Theory of International Trade* (New York, 1937), pp. 224 ff.

[5] This usage of "equilibrium" is not used in other price theory, including this paper. For discussion of the concept of equilibrium in the balance of payments, see J. E. Meade, *The Balance of Payments* (London, 1951), especially Chaps. I-II.

[6] Milton Friedman, *Essays in Positive Economics* (Chicago, 1953), Part I; Pareto, *Manuel d'Economie Politique* (2nd ed., French, Paris, 1937), pp. 43-50, and in general Chap. II.

[7] See R. F. Mikesell, *Foreign Exchange in the Postwar World* (New York, 1954), especially Chap. 6, for a discussion of the history of moves toward multilateralism before the EPU.

[8] I have presented tables to this effect in "East European Economic Policy, 1950-1956," *Annals of the Amer. Acad. of Polit. and Soc. Sci.*, May, 1958.

[9] See for instance the summary of the current interests of the Council for Economic Mutual Assistance in May, 1958, contained in *Finansije* (Beograd), No. 7, 1958, p. 506.

[10] That such a model will have more general use is shown by N. M. Kaplan and W. L. White, *A Comparison of 1950 Wholesale Prices in Soviet and American Industry*, RM-1443 (RAND Corp., May 1, 1955), pp. 75 ff.

[11] (*a*) Co-operative farms sell to the state up to a "compulsory delivery" quota at a low price; at a higher "contract price" on sales to the state above the quota; and at a still higher "free market" price to individuals. (*b*) Enterprises pay a "profits tax" on the basis of sales up to the level of output called the "production plan"; above this level of output, the tax rate per unit drops. (*c*) Workers receive piecework wage on output up to a "norm"; on above-norm output they receive higher piecework rates. (*d*) Consumers may (in periods of inflation) buy up to a stated amount ("ration") of goods at low prices, and larger amounts at higher, "commercial" prices.

[12] Outside the Soviet bloc, "direct control" would be more in line with institutional terminology than "plan."

[13] Multiple rate practices, as far as is known, are limited to "tourist" rates introduced in 1957. All business transactions are at the official rates.

[14] The discussion assumes interdependence, in the rotation B-A-C-B and also B-C-A-B. I do not yet know whether reversibility is a necessary condition for interdependence, but I think it is.

DISCUSSION

NICOLAS SPULBER: Professor Ames's paper represents an interesting and valiant attempt to establish criteria for determining the degree of "integration" in the European Soviet bloc.

The term "integration" has been used rather abusively in relation to the area, and any systematic effort toward its definition should be welcomed heartily.

After sketching briefly the pattern of international economic relations in the bloc, Professor Ames advances two sets of standards against which he attempts to measure the integration achieved in the area:

In his first solution, he refers specifically to market economies. In that framework, he equates integration to optimal distribution of goods within an area; i.e., to the reaching of a single price for the same goods with differences in prices due only to transportation costs in a market which comprises either the whole globe or only a group of countries. (This optimal distribution subsumes optimal utilization of factors even though the latter might not move freely.) Integration thus requires that all or most goods be traded within the area. The movement toward or away from integration will be indicated for the given group of countries by the movement of their internal price structures toward similar or dissimilar patterns.

After setting his model, Professor Ames attempts to apply the criteria established for integration in market economies to integration in Soviet-type economies. Observing then that the price patterns in the Soviet Union and Eastern Europe have been recently moving in opposite directions, he concludes that "by standards of market economies, the Soviet bloc is not integrated."

Since, however, Professor Ames observes that there is currently in the area a significant activity on the planes of both trade and output plan co-ordination, he indicates that the first standard is clearly of little use when approaching this problem in relation to the Soviet sphere. Hence, he suggests a different standard against which integration should be measured.

In the second version, integration is equated to (optimal ?) distribution of only those goods which are produced by "bloc-wide interdependent industries" (either of all or of some of the bloc countries). Professor Ames sets out a model of general equilibrium in which prices are established administratively and in which the firms operate under the rule of output maximization subject to the restraint that costs must be covered (with profits tending to be zero). Again as before, single clearing ruble prices will prevail in the market for the goods traded except for variations in prices due to transport costs. Domestic sectors with completely discordant price patterns could continue to exist without preventing the integration process, as defined.

I would assume that Professor Ames considers that this new model approximates rather closely the situation prevailing in the bloc. He adds, after establishing it, that in effect a series of steps toward this type of "interdependence" have occurred such as: the establishment of the clearing ruble, the

admission of the principle of single prices in exporting countries, the use of world prices in intrabloc trade, and lastly the approval of multilateral clearings.

If we visualize integration as a simple process of "fitting together" various economies, I wonder if we can very helpfully, in the case of the Soviet bloc, approach the process by using only a standard based on prices. It seems to me that in the first Ames model the standard set breaks down when applied to the bloc, simply because there is no serious way of knowing if the price patterns of the Soviet Union and of its satellites tend to converge or diverge now or in the past, and in what degree. Given the dissimilarity in size and factor endowments and above all the arbitrary intervention of the planners even though the plans are drawn on closely parallel lines, the domestic patterns have been continuously discordant, though I wonder who can tell when this discordance reached its peak.

The second—so to speak the original Ames—standard appears to me to be unsatisfactory though for somewhat different reasons.

First, it is questionable if one can really accept the Ames assumptions and the Ames rule that to maximize output provided cost is covered (i.e., produce not as in a market-economy model up to the point where marginal cost equals price but up to the point where average cost equals price) apply to Soviet-type economies. In Soviet terminology, "maximize output" actually means only "exceed the plan"—a very relative magnitude—while at the same time reduce your cost as related to the planned cost. Moreover both magnitudes—planned output and planned costs—are not functionally related.

Second, as already stated, interdependence obtains when the same clearing-ruble price is reached for the goods of bloc-wide interdependent industries. But which are in fact those bloc-wide interdependent industries? Many factors have stood in the past, and continue to stand now, in the way of a broad division of labor among the Soviet satellites. The attempt of each of these countries to reproduce in miniature the Soviet economic development—the abracadabra of cost and prices within each of these economies after only some timid attempts to revise them in 1956; the arbitrary decisions to import at a given time given goods and hence to export at a given time other goods in order to pay for the former; the dogma of the systematic priority in each country for the output of producers' versus consumers' goods—hampered and hamper the efforts toward a wide division of labor. What the Council of Economic Mutual Assistance and its numerous committees and subcommittees have achieved, outside some co-ordination at the level of intrabloc trade, are limited agreements among these countries concerning specific products. Thus each country or some of them only have agreed to produce given types of steel sections, trucks of different tonnage, rolling stock of slightly different specifications, and so on. There are some reasons to believe that similar agreements will also be reached in the future, though it is equally possible that the past agreements should be questioned. All these agreements have been brought about by approaching the problem of the division of labor from the political or technical-engineering side and of course not from the price side. How could anyone determine, with some semblance of logic, the relation be-

tween the terribly twisted domestic price (even excluding the turnover tax) and the "international prices" at which the goods of these industries are traded in the bloc? Actually there is no way of knowing if this technical-engineering apportionment corresponds in any way to the underlying factor endowments.

Professor Ames's model does not show a way of measuring efficiency (it may even be impossible to find such a way). Let me add that each bloc country has devised and uses a different way of measuring the efficiency of its foreign trade operations and that each one recognizes that these measures fail to attain their purpose. As indicated by bloc economists, these measures give at best only some vague idea to the planner as to the "profitability" of one foreign trade operation compared to another but do not yield any satisfactory answer as to the efficiency of the foreign trade system as a whole. This is due to the fact that both costs and rates of exchange are arbitrary magnitudes. (See, for instance, T. Pavel, "Pour un juste calcul de la rentabilité et de l'efficacité du commerce exterieur," in *Etudes Economiques*, Cahiers Number 106-07, Parti Communiste Francais, Paris, 1957.)

Officially, the prices at which goods are traded are stated to be the international prices, though we do not know where these international prices actually prevail (in New York, London, Paris, or Bombay, in the same market for all commodities, or in various markets for various commodities). We are told only that they are adjusted for seasonal fluctuations. Actually, a serious opposition has developed in the bloc on the part of the less developed countries against these prices which, it is stated, are the result of the "whim of the monopolists." Hence the suggestion of the smaller countries to adjust these prices in their favor, though nobody has any clear idea of how this "adjustment" should be devised and implemented. (See especially the meetings organized in Czechoslovakia on the economic efficacy of the foreign trade in *Politická Ekonomie*, Number 4, 1958, pages 384-389.)

Interdependence results in fact in the intrabloc market, not because price rationality prevails or would tend to prevail in the sector of bloc-wide interdependent industries, but because arbitrarily these countries decide today to fit together one industry and tomorrow another, in a crude process of achieving some sort of division of labor among them, though each one continues to maintain its own all-round economic plan. I would say that to my understanding this "fitting together" of these economies escapes a refined measurement rooted in the price system, though unquestionably the constructing of these models does reveal all the elements involved in such a problem, and hence goes a significant way toward the clarification of the questions considered. Complete integration would, of course, obtain if a single central plan would be devised for the area as a whole—no matter what this plan actually were. The steps toward such complete integration—be it, to start with, at the level of trade, or at the level of output—escape precise quantification.

WILLIAM W. HOLLISTER: My general view of Dr. Liu's paper is that it points to some of the important trends in the economy of mainland China,

both under the Chinese Communists and in the pre-Communist period, but that in doing so he overstates his case. I believe that the overstatements may well give a misleading impression of economic development during the period from 1952-57.

I fully agree with Dr. Liu that the organized sectors for industry, transportation, and construction made an impressive rate of increase from 1952 through 1957, that the social cost of the Communist system of controls more than counterbalance any economic gains achieved, and that the rapid rise in the population in conjunction with the limited rise in food production was the most critical and unresolved problem of the period of the First Five Year Plan. Having made these qualifications, however, it seems to me that the program for economic development during the period of the First Five Year Plan can be characterized not as a failure but as a success. From the standpoint of the Communist regime, it was even more successful since increases in output were achieved at the same time that the state established nearly complete control over the economy, and the Communists did not in the process encounter anything like the disruptions or the resistance that occurred during the Russian First Five Year Plan.

Indeed, Liu's figures for 1952-57 demonstrate a fairly rapid rate of economic development. I believe that the growth rates given for over-all output and for consumption in this period are in the low part of the range of estimates that can be made for the period of the First Five Year Plan, but the figures show a rapid increase for the modern sector, an increase in agricultural output averaging more than 4 per cent a year, and moderate increases in per capita consumption.

The paper refers to the marked irregularity in the increases in output achieved in the various years—which is attributed to failures in planning rather than to variations in agricultural production. I wish to suggest that the main impact of the level of agricultural output—particularly the cotton crop and other industrial crops—on the rest of the economy appears not in the year of production but in the following year. If this one-year lag is taken into account, I believe that the effect of agricultural production on the rest of the economy is quite discernible.

The paper judges the period of the First Five Year Plan to be a failure, not because of trends that occurred from 1952 through 1957, but because the Chinese economy should have done much better than this, since per capita output in 1952 was 6 per cent less than in 1933 and since per capita consumption is estimated as 20 per cent below the 1933 level in 1952 and 15 per cent below 1933 in 1957. Over-all output in 1952 is estimated as 5-7 per cent higher than in 1933 or about the level of output in 1936.

The relation of per capita output in 1933 and 1952 is one area where there is the least basis for firm conclusions. The population is estimated to have increased by a significant amount from 1933 to 1952—at an average annual rate of 0.7 per cent a year—but there is little evidence available as to trends in population through the period from 1933 to 1952. I find a significant increase in population intuitively correct, but I do so because I feel on the basis of scattered evidence that, except for certain periods of disruption, such

as 1937-38 for China proper, from 1945-48 for Manchuria, and 1948-49 for the whole mainland, that significant increases in output occurred. But if in fact total output—particularly food production—was relatively static throughout the period, I would intuitively feel that the total population also remained relatively stable.

The estimated population of 500 million people in 1933 is from 5-10 per cent higher than the accepted figures for population during the period. As I understand it, the estimate of grain production in 1933 involved is well over a third higher than the accepted figures for agricultural production in the 1931-37 period. Some adjustment in the prewar figures for food production is clearly necessary, and the only problem is how much they should be raised. The same sample data that lead to higher estimates for food production in 1933 also suggest a similar adjustment in the prewar figure for the rural population, but the estimate of food production in 1933 is raised much more than the estimated population in 1933.

I am also troubled by the relation of output in 1933 and 1952 in the estimates for trade, handicraft, native transportation, and services. Total nonagricultural output is estimated as increasing only as much as total population. This would mean that any increases in output per worker in the modern sector from 1933 to 1952 are entirely counterbalanced by an estimated decline in output for the unorganized nonagricultural sectors. This seems strange for two reasons. First, all the evidence indicates that there has been a steady growth in the population of urban areas in pre-Communist times as well as in the period from 1950 to 1957. Second, competition for industrial raw materials, such as cotton, undoubtedly accounts for much displacement of individual handicraft output, particularly farm supplementary handicraft; but much of trade, stevedoring, and many personal services are directly related to industrial production, to modern transportation, and to construction activities. I do not believe that there is evidence of a much greater degree of unemployed manpower in the nonagricultural population in 1952 than in 1933. Again we are faced with gaps in the available data and not with a firm estimate of trends in output from 1933 to 1952.

These reservations are, however, mainly a matter of degree. It is probable that per capita output in 1952 was only a little higher than in 1933, at most, and that, at best, per capita consumption was only somewhat less than in 1933. And compared with the progress of heavy industry from 1952 to 1957, gains in agriculture and handicraft during the period of the First Five Year Plan were far from spectacular. It is also true that the "Leap Forward" movement and the communes are part of new Communist policies aimed at large increases in these sectors. I share Liu's distaste for the new communes, finding them a peculiarly uncivilized and unsatisfactory form of association, and I, too, wonder if this new pattern of organization can endure. If this program for the communes can be carried out, it will indeed add greatly to the economic potential by tapping the very large sources of underemployed manpower in China's population. I do not interpret the latest developments, however, as a simple resort to compulsion in the face of a decline in economic incentives. I interpret them as a continuation of policies by which economic

incentives and compulsion are combined in a fairly skillful system of Communist controls over the economy and over the Chinese people.

The regime is committed as never before to dramatic increases in agricultural output. If it is successful, Communist China may exhibit a path of Communist development quite different than that of the USSR during its First and Second Five Year Plans, since agriculture and industry may both show significant increases in output. In any case, the present program represents a new and significant adaptation of the Communist theory of economic development to conditions in an underdeveloped Asian economy. I think that we will have to take seriously this Communist program and the increases in output that have been achieved. I feel that the paper does not give sufficient attention to many important aspects of this program for economic development.

THAD P. ALTON: There is little that I can add to Dr. Erlich's comprehensive survey of the past and present Polish economic situation within the space limitations that we face. My remarks therefore will be directed to a few particular points that he discussed and some observations on Polish plans for the period beyond 1958 which to me seem relevant to an understanding of the post-1956 economy.

Among the important changes in Poland since 1956 is the revival of significant economic discussion, which contrasts sharply with the earlier arid period. The interested reader can find detailed description of the Polish economic situation in many publications, and notably in those of the Economic Council attached to the Polish Council of Ministers. These documents provide exhaustive lists of past, present, and anticipated future disproportions between related economic activities which adversely affect economic development. Causes are discussed, remedies are proposed, and some new statistics are given.

One of the striking things that emerges from these discussions is that the economists and planners were very slow or reluctant to treat the economy as an interconnected set of activities and another is the fact that the opportunity-cost logic must be faced also in a socialist economy.

In the matter of establishing better proportions among related activities, the Polish economists are currently exploring the use of modified input-output tables. Thus, in an article in *Ekonomista* (No. 1, 1958), there appears such a table for 1956 in current prices covering material production. It is elaborated into seven basic sectors of production as well as foreign trade and final-use categories. Although this table is fairly primitive and furthermore reflects the disadvantages of a warped system of prices, it is regarded by the Polish Central Statistical Office as subject to improvement for programming production. In particular, the matrix would be recalculated in a better system of prices to give a more meaningful set of proportions among the categories used.

Official statistics show Polish gross industrial production expanding rapidly: annual increments of about 11.5 per cent in 1954-55 were followed in 1956 and 1957 by gains of 9.1 and 9.6 per cent, respectively. Placed alongside an

annual increment in 1956-57 of about 8 per cent in net material production (the Marxian definition of national income), it would appear that the economy was performing exceptionally well. Yet Oskar Lange, Gomulka, and other spokesmen in 1956 and subsequently presented a picture of imminent economic collapse. Clearly the official indexes must be regarded critically. Polish spokesmen themselves call attention to biases in the gross industrial production index on account of growth of subcontracting, introduction of relatively high-priced new products (particularly armaments), decline in quality, and other causes.

It seems clear from evidence on all sides that the Polish economy is still suffering from a massive overdose of the Stalinist prescription for socialist industrialization. And I would urge caution in the use of Polish aggregative economic data in the Domar-Harrod formula to reach conclusions as to the feasibility of the Six Year Plan and the current Five Year Plan. In view of the limitations of the Polish official data and particularly of the price system in which they are expressed, I doubt seriously whether any analytical conclusions can be drawn from their direct use. Their universe features the Marxian national income calculated at market prices which are relatively high for consumer goods, being padded here with sales taxes and profits of the socialized enterprises, and artificially low and subsidized for investment goods. Moreover, the share shown for "accumulation" in 1950-55 in Dr. Erlich's Table 1, which ranges from 20.3 to 27.9 per cent in 1956 prices, would vary from 28.8 to 38.2 per cent in 1950 prices.

The significance of a capital-output ratio in such circumstances is questionable. Perhaps after adjustment of the relevant categories to a factor-cost basis some useful conclusions can be drawn from the Domar-Harrod equation. One outcome would be that the Six Year Plan did not fail by any means for lack of a sufficiently high rate of investment judged by conventional standards as it did from a long list of negative factors subsumed under a capital-output ratio much higher than that mentioned by Dr. Erlich. Indeed, only a revaluation in terms of factor cost can show the tremendous price paid by the Polish population for mistakes of the past.

The question of the feasibility of the Six Year Plan would also need to take account of the diversion of investment during its course away from consumer goods industries, where the capital-output ratios were relatively low, to engineering and other industries, where they were very high. Blunders also occurred in Poland's use of labor. Despite the great need for machinery of many kinds, the engineering industry averaged only 1.3 shifts per day during the period 1953-56. Feather bedding occurred to such an extent that about 500,000 employees (half the increment to industry during the Six Year Plan) today is considered superfluous.

I would like to add a few remarks about Poland's plans beyond 1958, for the present is conditioned not only by the past but also by the hopes and fears for the future. The period from 1956 to 1958 is characterized by Polish spokesmen as an interlude in which the rate of investment would be reduced, the disparities impeding growth alleviated, and at least a partial redemption made of the earlier broken promises of a higher level of consumption. The

plans for 1959-75 call for a somewhat higher rate of investment to assure a continued high per capita rate of growth of national income and employment opportunities for Poland's rapidly increasing population. The shape of the population tree is such that the estimated annual cohorts of age 16, numbering about 385,000 in 1959, will rise very slightly in 1960-61, but jump by more than one-half to 589,000 in 1963, and rise gradually thereafter to around the 700,000 level in the period 1967-75.

Present thinking visualizes an educational reform featuring a two-year vocational training period for this wave of youth, but this will only defer the pressure on employment opportunities. For 1961-65 alone a net increment of 1 million population in working ages is expected. Preliminary projections assign around 300,000 of this total to industry, 200,000 to trade, and the balance to other nonagricultural pursuits. Surprisingly, trade shows the highest projected increase, 26.3 per cent, while industry claims a modest 9.8 per cent (see Kazimierz Secomski's article in *Nowe Drogi,* 1958, No. 1).

The Five Year Plan for 1961-65 tentatively schedules a 40 per cent increase in the national income, a 34 per cent gain in aggregate consumption (about 23 to 25 per cent on a per capita basis), a 20 per cent increase in agricultural production, and a 50 per cent gain in industrial production. About 80 per cent of the projected growth in industry, it is estimated, will come from increases in output per employee. Modernization rather than new investment is the keynote for 1961-65, and great emphasis is placed on speeding up the cycle of construction.

The longer term plan, 1961-75, is still under discussion and doubtless will undergo many changes before and during its course. It projects a 7.1 per cent annual rate of growth of net industrial production, whereas for the period 1956-60, a rate of 8.9 per cent was foreseen, while the Soviet projection for 1961-75 falls in the range of 5 to 7.6 per cent (cf. *Gospodarka Planowa,* 1958, No. 6, pages 1-8).

In view of the grave problems the Polish planners are facing in raising worker morale and quality of production in the socialized sector, the achievement of the plans for the period 1959-75 presents a formidable challenge. The most striking positive aspect of the recent past has been the sharp increase in agricultural output following the decision to allow peasants to leave the collective farms and the introduction of more favorable price and investment policies for private agriculture. Although the official policy for the period 1956-58 also encouraged the growth of private handicrafts, further expansion is threatened by the progressive scheme of taxation which impinges sharply on shop owners who employ workers or apprentices. Unless something is done to remedy this situation, the future supply of artisans is threatened, and with it an important potential supply of consumer goods that could do much to increase real wages.

The improved situation in agriculture is indicative of the kinds of gains that could occur, but in both instances a climate of confidence in the future is essential for further increases in investment and production. In these areas relatively small investments can show immediate productive results, but the

lack of clarity in the government's policy on private enterprise discourages investment in favor of current consumption.

Recent discussion among Polish economists indicates that the problem of efficiency of investment at last is being considered in a realistic way by proposals to charge interest on capital. A rate of 7 to 10 per cent has been suggested as a common-sense approach, but it has been difficult to find Marxist theoretical support for such a solution. The criterion of profitability based on current prices clashes with the planners' views of the kind of economy that should emerge in the future.

Basically the problems of efficiency in the Polish economy always seem to come back to the conflict between administrative, centralized decision making and the desires of the population and producers to arrive at decisions in a freer, decentralized way. The former approach requires coercion, which engenders an antagonistic feeling on the part of the population and the employees in the socialized enterprises. Here it would appear is a major factor in the much complained about negative attitude toward work and toward socialized property.

THE FUNDAMENTALS OF ECONOMIC PROGRESS IN UNDERDEVELOPED COUNTRIES

USING THE RESOURCES AT HAND MORE EFFECTIVELY[1]

By ARNOLD C. HARBERGER
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In this paper I attempt to explore the possible results of eliminating misallocations of resources in economies like Chile, Brazil, and Argentina. In Section I, a static framework is adopted; the conclusion is reached that reallocating existing resources, while maintaining the existing production functions in each line of activity, would raise national welfare by no more than 15 per cent. Section II focuses on the rate of growth; here it is concluded that policies aimed at eliminating "distortions" in the price mechanism can raise the long-term rate of growth of national income, but not spectacularly. It is argued that spectacular advances in the growth rate will come, if at all, from improvement in the quality of the labor force and from an increased pace of technical advance.

I

The principal sources of misallocation in the countries in question are: (*a*) a rapid rate of inflation, (*b*) a rate of interest on bank loans below the rate of inflation and hence negative in real terms, (*c*) substantial barriers to foreign trade, through a number of different devices, (*d*) considerable monopoly, usually in protected industries, (*e*) a sluggish and disequilibrated labor market, in which "equivalent" labor may get as little as two-thirds or three-fourths the average wage in some sectors (e.g., agriculture), and as much as one and one-fourth or one and one-half times the average wage in others (e.g., the large foreign-owned enterprises), and (*f*) a system of taxes and tax evasion which in various ways draws resources into a pattern in which the value of marginal product of similar resources differs quite substantially among activities and sectors. To try to estimate precisely the welfare costs of each type of distortion would at the present stage be hopelessly difficult. I have contented myself with trying to overestimate the welfare costs of each of two broad categories of distortions: external and internal. I try to overestimate in the sense that at the many places where more-or-less arbitrary assumptions were necessary, I have leaned toward those leading to a higher rather than a lower estimate of welfare cost. I divide

[1] This and all other footnotes appear at the end of this paper.

the internal from the external distortions because it is convenient to attempt to measure their costs in somewhat different ways.

To estimate the welfare costs of trade restrictions, I utilize the concept of an equivalent tariff. There must exist some rate of ad valorem duty on all imports which would restrict imports to their present over-all level. I judge this rate to be around 50 per cent in the case of Chile.[3] This judgment is based on the fact that most of the protected industries could maintain present levels of output with this amount of protection. A few industries would have to curtail output if given only 50 per cent protection, but counterbalancing them would be a number of industries for which 50 per cent protection would be more than they currently enjoy, and which would expand output at the expense of imports if given such protection.

Assuming, then, that a 50 per cent tariff would restrict trade about as much as the present restrictions, we proceed to estimate the welfare costs of such a tariff. The foreign trade sector is sufficiently small (some 10 per cent of national income) that we can employ Marshallian methods without serious error. Initially, I assume that Chile has no influence over the world price of either her exports or her imports. With a 50 per cent tariff, the marginal dollar's worth of exports will buy import goods worth $1.50 internally; on the first dollar's worth of expanded exports, accordingly, the net gain is $.50. On the last unit of expanded trade following the elimination of the tariff, the net gain would be zero. Our measure of the welfare cost of a 50 per cent tariff is thus a triangle whose altitude is $.50 and whose base is the number of dollars by which exports (and imports) under free trade would exceed their levels under the tariff. I assume that trade would not more than double as a result of the introduction of free trade. The base of the triangle in question is thus taken to be not more than the present dollar value of exports, which amounts, in the countries in question, to some 10 per cent of the national income; and the area of the triangle, which is our measure of the welfare gain which would result from eliminating present restrictions, is estimated to be no more than 2½ per cent of the national income.

Why is it reasonable to suppose that trade would not more than double as a consequence of removing a 50 per cent tariff? Let us consider an example in which the freeing of trade leads to a 20 per cent rise in the relative price of the dollar. Internal prices of export-type goods thus rise 20 per cent. Internal prices of import-type goods, which would have fallen from index 150 to index 100 as a result of the tariff repeal if the exchange rate had remained unchanged, actually end up at 120, having fallen in the net by 20 per cent. In these circumstances a doubling of trade would reflect elasticities of import demand and export

supply equal to 5. Neither a commodity-by-commodity approach, asking where one might expect additional imports or exports to appear as a result of price changes in, say, the Chilean economy, nor an examination of how imports and exports appear to have responded to price changes in the past suggests that the elasticities in question are as high as this.[8]

Two considerations would operate to modify our estimate that trade restrictions might cost the Chilean economy up to 2½ per cent of its national income. The first is that an across-the-board tariff at 50 per cent for all commodities tends to have less welfare cost than a set of different tariffs whose average rate is 50 per cent, since the welfare cost of a tariff varies with the square of the rate. This consideration, which would lead us to raise our estimate of the welfare costs of restrictions, is unlikely to be serious except in the cases of a few commodities (e.g., automobiles) on which the present restrictions operate with extreme severity, and which account for only a very small fraction of total trade. The second consideration is that to the extent that Chile has some monopoly power in the markets for its exports, the expansion of trade should optimally stop somewhat short of the free-trade point. This would lead us to lower our estimate, but again probably not to a serious extent. The only plausible instances of monopoly power are in copper and nitrates, and even here Chile's power to influence world market prices is probably quite small, especially in the longer run relevant to this discussion.

In estimating the welfare costs of "internal" distortions, I have chosen to focus on the basic resources: labor and capital. By comparing their actual distribution among sectors with that which would emerge in an optimum situation, we get an idea of the quantity distortions prevailing in the economy. Alternatively, by comparing the values of the marginal product produced by given resources in different sectors, we get an idea of the price distortions in the economy. This device is highly convenient for a problem as complicated as ours. A sector can have "too little" labor because of monopoly power of its producers, or because its output is subject to excise taxation, or because of an artificially high wage rate; yet the welfare costs of having a given amount less labor than the optimum are to a first approximation the same, regardless of the cause. Viewed from the price distortion side, the story is the same. The welfare costs of a given sector's having a marginal productivity of capital 10 per cent above the level which would equalize net rates of return in all sectors do not in the first instance depend on the reason why too little capital is used in the sector.

Needless to say, a focus as broad as ours requires a general-equilibrium approach. I have chosen to divide the economy into ten sectors

producing equal values of product and to use initially as my measure of welfare a utility index of the Cobb-Douglas form:

$$U = X_1^{1/10} X_2^{1/10} X_3^{1/10} X_4^{1/10} X_5^{1/10} X_6^{1/10} X_7^{1/10} X_8^{1/10} X_9^{1/10} X_{10}^{1/10}$$

This index has the property that it says people are y per cent better off in any instance in which each of the goods and services they use has increased by y per cent. It furthermore implies a unit of elasticity of demand for the product of each of the sectors; in the case given, 10 per cent of the national income is spent on the product of each of the sectors regardless of the relative price structure. This assumption will be defended later, as will the arbitrary division into ten sectors.

Within each sector, I assume a production function of the form $X_i = L_i^{1/2} K_i^{1/2}$, where X_i is the output of the sector (measured in value-added terms), and L_i and K_i the quantities of labor and capital it uses. This function implies that if labor and capital were paid the value of their marginal product, half of the value added of each sector would go to each. These production functions can be substituted into the utility function to express utility directly as a function of the allocation of resources. Thus:

$$U = L_1^{1/20} K_1^{1/20} L_2^{1/20} K_2^{1/20} \cdots \quad \cdots \quad \cdots L_{10}^{1/20} K_{10}^{1/20}.$$

If labor in any sector were paid the value of its marginal product, it would receive 1/20 of the national income; thus in a competitive optimum situation labor would be equally distributed among the sectors. The same goes for capital. If we set the available amounts of labor and capital at 1,000 each, we conclude that the optimal allocation would be 100 of each factor in each sector.

We are now in a position to impose a set of distortions on this model economy. Table 1 shows a possible allocation of labor, different from the optimum, together with indices of the value of marginal product of labor in each sector.

TABLE 1

Sector	1	2	3	4	5	6	7	8	9	10
Quantity of labor...........	33⅓	50	75	90	100	100	110	125	150	166⅔
Marginal productivity of labor	300	200	133⅓	111	100	100	91	80	66⅔	60

In this case, sector 1 has only a third of the optimum quantity of labor, while sector 10 has two-thirds "too much." The marginal product of

labor in sector 1 is five times that in sector 10, and that in sector 2 more than three times that in sector 10. I feel quite confident that the situation depicted in Table 1 is substantially more distorted than that actually prevailing in the labor market in Chile. Wages for labor of equivalent quality there may differ by a factor of two, but probably not much more and not in a very large fraction of the total market. The example thus allows for substantial effects from other influences, such as monopoly and taxes, which would cause differences between wages and the value of marginal product, and might make for more variance among sectors in marginal productivity than there is in wages.[4]

Under the optimum distribution of labor and capital (100 units of each factor in each sector), our welfare index would be 100; if capital were allocated optimally but labor were distributed as in Table 1, the welfare index would be 95. If labor were distributed as in Table 1, and capital likewise, the welfare index would be 91.[5] I believe that this last case allows for distortions in both the labor and capital markets which are more extreme than any likely distortions in the actual Chilean economy. My conclusion is accordingly that eliminating the internal, intersectoral distortions in the Chilean economy would raise the level of welfare by probably no more than 10 per cent.

I now turn to a brief defense of the assumptions underlying the above model, followed by an indication of how sensitive the result obtained is to changes in the assumptions.

The elasticity of demand for each sector's product was assumed to be unity. I take this to be a reasonable central value for the range of price elasticities that have been reliably estimated in demand studies. The price elasticity of demand for food appears to be about −.4, and this is almost surely at the low end of the scale; at the other extreme, price elasticities for housing and for refrigerators appear to be in the range between −1 and −2. Higher elasticities have been measured only in cases where the good in question has been so narrowly defined as to exclude an obvious close substitute.[6] I define my sectors as sets of products such that for no member of a set is there an obvious close substitute outside the set; thus guarding almost by definition against extremely high sector elasticities. On this definition there would be many more sectors than ten, but the sectors can then be reaggregated, putting those with similar resource distortions in one group.

The elasticity of substitution between labor and capital was assumed to be unity. In the absence of strong empirical evidence on this point, I defend my assumption by assuming alternatively very low (say .25) and very high (say 4.0) values for the elasticity of substitution. If capital were a very poor substitute for labor, the marginal product of capital would fall rapidly as extra capital was absorbed; we should have

to conclude that Chile's capacity to absorb capital profitably was quite severely limited. On the other hand, if capital and labor were extremely good substitutes, the idea of Chile being seriously short of capital would make little sense. Labor, production-wise, could do practically the same jobs as capital would, and even adding greatly to the stock of capital relative to labor would have little effect on real wages. Even elasticities as low as .5 or as high as 2.0 appear to me to have implausible implications as to the consequences of a doubling of the capital stock in a country like Chile.[7]

The result obtained is only mildly sensitive to some of the assumptions made. It is, for example, not necessary that all the demand elasticities be unity, but only that they average to unity, in order to yield roughly the same result, provided that the sectoral demand elasticities are not highly correlated with the sectoral distortions. A similar situation prevails in the case of the sectoral elasticities of substitution between labor and capital. The result is quite insensitive to the division of the product of each sector between labor and capital; indeed it is mathematically invariant to changes in the exponents of the Cobb-Douglas function in the set of cases where the exponents are the same in all sectors.

The sensitivity to changes in the average demand elasticity and average substitution elasticity is a bit curious, because if we keep the price distortions the same as assumed earlier and reduce the amount of substitution in the model, the quantity distortions have to be reduced; while if we keep the quantity distortions the same as earlier and reduce the amount of substitution, the price distortions have to be increased. The welfare costs of a set of price distortions vary directly with the elasticities assumed, while the costs of a set of quantity distortions vary inversely with the elasticities. Thus, saying that the average demand elasticity and the average substitution elasticity "ought" to have been assumed to be ½ rather than unity does not get one very far; one must decide whether to maintain the old set of price distortions or the old set of quantity distortions in the new situation in order to know whether the new elasticity assumption will cut our earlier estimate in half or double it. If, however, one is prepared to say that neither more extreme price distortions nor more extreme quantity distortions than those assumed are likely to prevail in the Chilean economy, then no changes in the assumed average elasticities can yield a higher estimate of welfare cost.

The principal sensitivity of the estimate is to the extreme distortions assumed. If, for sector 5 in Table 1, we had assumed the same quantity and price distortions as for sector 1, and if for sector 6 we had assumed the same quantity and price distortions as for sector 10, and if a similar

augmentation of extreme distortions were made in the case of capital, our welfare index would have been 86 rather than 91. I feel reasonably confident that the assumed distortions are sufficiently extreme but indicate this sensitivity in the event that the judgments of others may differ.

Thus far we have not considered the possibility of distortions within sectors. Here I shall allow for 30 per cent of the national income to be affected by such distortions. Within this 30 per cent, I allow for one-half of each set of close substitutes to be priced 50 per cent "too high" relative to the other half of the set, and I allow for the cross-elasticities of demand between the two halves of each set to be 5 (to my knowledge, no reliable estimate of this high a cross-elasticity has yet appeared). These extreme allowances lead to an estimate of the welfare cost of within-sector distortions equal to 3 per cent of the national income. (The derivation of this result will be provided on request.)

In summary, I have estimated that the welfare costs of external distortions are less than 2½ per cent of the national income, the welfare costs of internal distortions among sectors less than 10 per cent of the national income, and the welfare costs of within-sector distortions less than 3 per cent of the national income. I reach the judgment that eliminating resource misallocations while maintaining existing production functions might raise the level of national welfare by some 15 per cent, but probably not more.

II

Section I suggests that policies to improve resource allocation in economies like Chile may have effects which are substantial but would probably not lead to spectacular changes in the level of living. In this section we test the possibility that better allocation policies might lead to a substantial increase in the rate of growth of national income; thus having a spectacular dynamic effect on living standards.

The percentage rate of growth, g, of national income can be expressed as follows:

$$g = s_L l + im + r + q_L + t,$$

where s_L is the share of labor in the national income, l the percentage rate of growth of the (employed) labor force, i the fraction of national income devoted to net investment, m a weighted average of the net marginal productivities of capital in the various segments of the economy, r the contribution to the rate of income growth of reallocations of the resources of the economy, q_L the contribution of improvements in the quality of the labor force, and t the contribution of technological advance. I shall consider each of the five components of the rate of

growth in turn, defining it in more detail, indicating its possible order of magnitude, and attempting to judge its sensitivity to improved allocation policies.

The contribution of labor force growth to income growth is measured by $s_L l$. If the aggregate employed labor force grows at 2 per cent per year, we estimate its potential contribution to national income by assuming that the new entrants have a similar quality distribution as the existing labor force and that they distribute themselves among industries and activities in the same proportions as the existing labor force. Taking the wage rate in each activity as our indicator of marginal productivity, we estimate the dollar contribution of this year's labor force growth to be 2 per cent of last year's aggregate wage bill. Expressing this as a percentage of last year's national income yields $s_L l$. In Chile the labor force has grown at around 2 per cent or slightly more per annum and the share of labor in the national income has been a little over one-half. Hence we reach the conclusion that labor force growth contributes slightly more than 1 per cent per annum to the rate of income growth. Presumably neither the share of labor in the national income nor the rate of growth of the labor force would be affected by improved allocation policies.

The contribution of increased capital can be measured analogously with that of labor, yielding an expression $s_K k$, where s_K is the share of capital in the national income and k is the percentage rate of growth of the capital stock. Improved allocation policies would presumably not influence the share of capital but might influence the rate of growth of the capital stock through their effect on savings. Eliminating inflation would be the principal mechanism through which savings might be influenced; presumably voluntary savings would increase with less inflation, but "forced" savings would decline. To get an idea of the present magnitude of $s_K k$, it is convenient to express s_K as mK/Y, and k as I/K, where K is capital stock, I is net investment, and Y is national income. Thus $s_K k$ is equal to mI/Y, or im, which appeared in the formula given earlier. Net investment in Chile appears to have averaged somewhat less than 5 per cent of the national income in recent years, and the marginal productivity of capital (in real terms) appears to be somewhere between 10 and 20 per cent. The contribution of net investment to the rate of income growth thus probably lies between ½ and 1 per cent per year. My judgment is that the low level of income of Chile would itself prevent net domestic investment from reaching a figure as high as 7 per cent of the national income; hence I conclude that even in the event that the stopping of inflation leads to greater savings and investment, the resulting increase in the rate of income growth would be small, probably less than ½ per cent per year.[8]

In isolating the influence of increased labor and capital, we hypothetically held the distribution of each resource among industries and activities constant. The actual distribution will of course typically change over time, making for increases in national income if resources have moved from less productive to more productive uses, and for decreases in income if the opposite sort of movement has occurred. The potential increase of up to 15 per cent in national welfare, which we estimated in Section I might result from policies leading to improved resource allocation, would be reflected in r, the reallocation component of the growth rate. Since the job of reallocation clearly takes time, the whole gain would not be reflected in the income growth of a single year but would presumably be spread over several years, contributing, say, 1 or 2 per cent to the annual growth rate for a series of years. Once this process of adjustment was completed, there would presumably be no further significant influence of improved policies on the reallocation component of the growth rate.[9]

Improved quality of labor makes a contribution q_L to the growth rate, which could be measured with reasonable accuracy if we had statistics on the distribution of the labor force by stable and well-defined quality categories. In the absence of such data, let me note (*a*) that policies to improve resource allocation would presumably have no direct effect on the improvement of labor quality; (*b*) that improvement in labor quality at present appears to contribute only a relatively small component to the rate of income growth in Chile; and (*c*) that additional expenditures on technical training and education in Chile might have substantial effects on the growth rate.[10]

The contribution of technical advance to the rate of growth of income works via changes in production functions which reduce unit costs (or improve quality for given cost). These changes can be organizational or technical, and may or may not entail additional net expenditures on capital equipment. We do not have measures of the contribution of technical advance to the rate of economic growth in Chile, but, as in the case of improvement in the quality of labor, we infer from the low rate of per capita income growth that the contribution of technical advance has been small. I would not expect policies leading toward better resource allocation to have a substantial effect upon t, the contribution of technical advance to the growth rate. Incentives to reduce costs are just as strong in the present distorted price structure as they would be in an optimal one. Possibly, however, the elimination of inflation would produce a minor increment in t, because rapid inflation blurs people's perceptions of the relative price structure and may prevent them from being aware of some of the possibilities of reducing real costs.

I conclude from this evaluation of the possibilities of increase in the

different components of the growth rate that policies aimed at improving resource allocation might help somewhat but would probably not provide the spectacular "take off" into economic development which most countries in Chile's position hope for. I would think of improved allocation policies as being an important component of any well-planned effort at achieving such a take off but not as the key factor. In the case of Chile, the potential gain of up to 15 per cent in national income, indicated in Section I as the static effect of improved resource allocation, would probably add a per cent or two to the growth rate over a period of years. As the reallocation of resources neared completion, the contribution of r to the growth rate would fall back to its normal low level, but there might be some longer term influence of improved allocation policies on the growth rate via the increased saving and the increased precision of cost calculations which might result from stopping or greatly reducing inflation.

If there is any key factor at all for achieving rapid development, I believe it is technical advance. The possibilities of increasing the rate of saving are quite limited in poor countries, as are the possibilities of reducing the rate of population growth. The limited changes in these factors that seem plausible would not have a drastic effect on the growth rate of income. Technical advance, on the other hand, seems to be capable of contributing substantially to the growth rate for fairly long periods. According to Kendrick's estimates, technical advance (i.e., real cost reduction) in U.S. manufacturing went on at an average rate of over 3 per cent per year from 1919 to 1929 and at an average rate of over 2 per cent per year from 1929 to 1937.[11] Brazil, in spite of being poorer than Chile and in spite of having equally severe distortions in internal resource allocation, has enjoyed a growth rate of between 2 and 3 per cent per year in per capita real income in recent years, as compared with Chile's rate of close to zero. I find the only plausible source of this difference to be a differential rate of technical progress.

One way of viewing technical advance which may help rationalize its variations as among time periods and places is to treat it as a process of adaptation to possibilities. Let Z be the maximum income that could be produced with a country's existing resources if the best techniques possible with today's level of scientific knowledge were used. Define G $(=(Z-Y)/Y)$ as the percentage gap between today's income and its potential, Z. Let A be the coefficient of adaptation, telling the fraction of previously unutilized possibilities which are put to use in a year. If G were 50 per cent, indicating a potentiality of raising income levels by 50 per cent, and A were 2 per cent, then technical advance would contribute 1 per cent to the rate of income growth this year, the formula being $t = AG$.

Even the most casual observation suggests that the percentage gap between actual and potential use of existing resources is much greater in Chile than it has been in the United States—probably easily twice as big. If Chile were to achieve a coefficient of adaptation equal to that of the United States, she would thus probably obtain a level of t two or more times as high as prevails in the U.S. The long-term average level of t for the whole U.S. economy appears to have been somewhere between 1.0 and 1.5 per cent per year.[12] We are thus suggesting that raising the Chilean coefficient of adaptation to the U.S. level might lead to a rate of technical advance of 2 or 3 per cent per year. This would give Chile a rate of per capita income growth comparable to those which Brazil and Mexico appear to have had in recent years.

The disturbing thing about focusing on the rate of technical advance and on the coefficient of adaptation is the possibility that these key factors may be largely beyond the influence of policy decisions. An energetic and acquisitive society is likely to have a high coefficient of adaptation, but it is hard to see how public policy can create such a society. Furthermore, as Kendrick's work shows, even in a given society the rate of technical advance is subject to substantial fluctuations, for which no satisfactory explanation has yet appeared. Yet there are surely ways in which public policy can accelerate the rate at which available knowledge is applied to use resources more efficiently. This can be done in part by promoting the international flow of technical knowledge (e.g., fostering foreign direct investment or co-operative technical arrangements between domestic and foreign firms and technical training of nationals abroad) and in part by spreading knowledge internally.

In the Chilean case, I would emphasize the possibilities to be achieved from spreading technical knowledge internally. The rewards given by the market to engineers, technically trained managers, agronomists, and other technicians themselves justify the investment in their training at a rate of real return which compares favorably with the best returns on investment in physical capital equipment. Yet these are the very people who make it their business to reduce costs, and the benefits of cost reduction accrue largely to the general public. Between the reward of these cost-reducers and their real social productivity we probably find divergences far more extreme than those which occur between private and social benefits in any other significant area of the economy. So long as the rate of private return on investment in technical training remains at or near the normal rate of return on capital, we have evidence that the social rate of return must be much higher, and an indication that public policy efforts to expand the supply of technically trained people have a high place on the list of policies to promote economic development.[13]

FOOTNOTES:

[1] This paper summarizes the main lines of a more extensive study done at the Centro de Investigaciones Economicas of the Catholic University of Chile. Space limitations have made it necessary to eliminate much of the supporting argument at several points. The author will provide further information on request.

[2] My own experience has been largely with the Chilean economy. I have the feeling and several knowledgeable experts have assured me that the situations of Argentina and Brazil are roughly similar to Chile in the matters treated in this section.

[3] A 20 per cent fall in the internal prices of imports and a 20 per cent rise in the internal prices of exports represent only one of the possible sets of price changes that might result from eliminating a 50 per cent tariff. If the exchange rate rose by 35 per cent, there would be a 35 per cent rise in the internal price level of exports, but only a 10 per cent fall in the internal price level of imports. In this case a doubling of trade would entail an elasticity of export supply of roughly 3, and an elasticity of import demand of 10. If the exchange rate rose only by 5 per cent, there would be a 30 per cent fall in import prices, and a 5 per cent rise in export prices, requiring elasticities of around 3 for import demand and around 20 for export supply in order to produce a doubling of trade. In all of these cases at least one of the elasticities necessary for a doubling of trade is implausibly high. In arriving at my judgments as to the elasticity of import demand, I have in mind that the relevant elasticity is long run and should take into account the curtailment of domestic production of import-type goods following a reduction in their internal price. Suppose that at present the total demand for import-type goods is 100, and that it is supplied half by domestic production and half by imports. A doubling of imports could then emerge if domestic production were cut from 50 to 25, while total demand expanded from 100 to 125. I believe that it is pressing towards the limits of plausibility to assume that this result would come from a price change as small as 20 per cent. It might quite plausibly result from a price reduction of a third, but then the rise in export prices would not be sufficient to generate the necessary doubling of the level of exports.

[4] The much-discussed case of zero marginal productivity of labor in agriculture does not exist in the economies of southern South America. The bulk of the agricultural labor force in these countries is voluntarily hired by entrepreneurs who are free to adjust the size of their labor force over time, in accordance with their notions of profit possibilities. It may indeed be possible in these countries to reduce the agricultural labor supply and at the same time maintain or increase output, but these possibilities entail either adding to the capital employed in agriculture and/or changing the production functions along which entrepreneurs are operating. This analysis takes the production functions currently "in use" as given, and measures the marginal product of any resource on the basis of given amounts of co-operating resources. I take sectors 1 and 2, where labor's marginal productivity is low relative to the rest of the economy, to represent agriculture in the Chilean case. Note that in our example these sectors account for almost a third of the labor force.

[5] I assume here not that the same sector will have one-third the optimum amount of capital as has one-third the optimum amount of labor, etc., but only that there be one sector with one-third the optimum amount of capital, another with one-half, etc. In our example, the result is invariant with respect to shifts in the location of distortions, so long as the percentages of the labor force and capital stock subject to given amounts of distortion remain unchanged.

[6] The elasticity for prime beef, holding the price of choice beef constant, or that for Fords, holding the price of Chevrolets constant, would surely be greater than 2, but the elasticities of beef of all types, and for automobiles as a group, appear from existing studies to be substantially less than 2. Likewise, there is evidence that elasticities of import demand are sometimes greater than 2, but not that elasticities of demand for import-type goods (imports and their domestic substitutes) are as high as 2.

[7] Assuming that initially capital gets half the national income and has a marginal net productivity of 20 per cent, a doubling of the capital stock while keeping the labor force constant would lead to a fall of capital's marginal productivity to 17 per cent in the case of an elasticity of substitution of 2, to 14 per cent if the elasticity were 1, and to 8 per cent if the elasticity were one-half. Wages would rise only a little more than 20 per cent in response to the doubled capital stock if the elasticity were 2; they would rise by 50 per cent if the elasticity were 1, and by 90 per cent if it were one-half. These calculations assume a perpetual capital stock; if depreciation is allowed for, the implied changes in the net marginal productivity become even more markedly different under the alternative elasticity assumptions. In the calculations, arc elasticities were evaluated at the midpoint of the range of each variable.

[8] Foreign investment does not help to raise the per capita income of the host country

to the extent that the marginal product of the investment accrues to foreigners. The host country gains to the extent that part of the return on the foreign capital can be siphoned off, principally by taxes, and also through such technical advances as may be embodied in the foreign investment. Technical advance will be considered separately below. For the moment I shall write off as negligible the amount that could be siphoned off by the government out of the return on such extra foreign investment as might be made as a result of improved allocation policies.

[9] There is always some reallocation being called for, because of the changes in tastes and technology that steadily take place. However, the amount of reallocation newly called for in any given year would be only a small fraction of the total amount needed to move from the present highly distorted situation to an optimum. The normal contribution of r to the growth rate would thus probably be quite small once the transition toward an optimal allocation was substantially completed. This small contribution might be lower than the present normal contribution of r, because at present some of the reallocation which takes place is in response to price or wage disequilibria, which presumably would be smaller (or absent) in an optimal situation. On the other hand, some of the reallocation which now occurs may actually take resources from uses of higher to uses of lower marginal productivity (e.g., because of a subsidy on the latter uses). Such negative contributions to r would presumably not occur under a set of optimal policies.

[10] Statement *b* is based on the fact that over the last five or so years the rate of income growth has been at about the same rate as the rate of growth of population and can be largely explained on the basis of the incremental capital and labor that have been fed into the productive machine. There is thus little room for a substantial contribution from q_L. Because of Chile's high rate of population growth, relatively large expenditures on education and training are necessary in order to keep the average quality of the labor force constant, counteracting, so to speak, a potential decline in labor quality. Statement *c* is based on the fact that a year of technical training will raise an unskilled laborer's earning power by 50 per cent or more, while four years of technical university training will about treble a high school graduate's earning capacity. The rate of return on investment in technical training is in the neighborhood of 20 per cent per year, in real terms; this counts both foregone earnings and costs of providing instruction as components of the sum "invested."

[11] John W. Kendrick, "Productivity Trends: Capital and Labor," *Rev. of Econ. and Statis.*, Aug., 1956, p. 254. Kendrick's measure was essentially of $(q_L + t)$. He netted out of the observed growth the effects of added labor and capital, assuming that labor quality remained unchanged. Effects of reallocations were largely removed by his measuring growth rates for thirty-three industry groups separately. Kendrick's median measure for the 1919-29 period was 3.9 per cent per year and for the 1929-37 period 2.6 per cent per year. I use somewhat lower figures to make allowance for possible improvement in labor quality.

[12] Kendrick, *op. cit.*, estimates $(r + q_L + t)$ for the U.S. private domestic economy to have averaged 1.7 per cent per year from 1899 to 1953. A figure of about 1.6 per cent is estimated by Abramovitz in "Resource and Output Trends in the United States since 1870," *A.E.A. Papers and Proceedings*, May, 1956, p. 8 (Table 1, Row 18). My lower figures attempt to make plausible allowance for the contributions of r and q_L.

[13] Most of the physical investment projects which are justified on the basis of external economies have a private rate of return well below the normal rate; in addition, many of the external economies alleged to exist in these cases turn out on close examination to be questionable or of small magnitude. I feel that public investment in technical training represents a more advantageous use of public funds than a goodly fraction of the physical investments which have been carried out in Latin America either by the state or through direct or indirect subsidies.

In terms of the breakdown of the growth rate given earlier, the training of engineers, managers, etc., presents a problem. Should it be classified as contributing to q_L or to t? In principle the increment in quality of labor as measured by improvement in productivity along existing production functions belongs in q_L, while the effect of shifting production functions belongs in t. Faced with the need of making a practical choice, I would allocate the increment in market earning power of the people trained to q_L, and the excess of their total social productivity over their earnings to t. The issue is, however, in any case not substantive.

ADDING TO THE STOCK OF PHYSICAL AND HUMAN CAPITAL

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Introduction

It is generally agreed that capital formation is one of the principal requisites of economic progress. Indeed, many discussions have concentrated on investment almost to the exclusion of other, and perhaps more important, requirements. Capital formation, moreover, has usually been thought of as consisting of additions to the stock of physical capital in the form of reproducible instruments of production. Although Adam Smith included in a country's stock of fixed capital "the acquired and useful abilities of all the inhabitants," most economists have given little attention to human capital. Human capital is nearly always omitted from statistics of capital formation and, what is more serious, is often neglected in thinking about development and in formal development plans.

It would be tedious to review the long controversy with respect to the definition of capital or to examine in detail current differences in the usage of the term. Something must be said, however, to clarify the present discussion.

By physical capital, I mean land, structures, durable equipment, and commodity stocks. Except for some differences in the treatment of land, this is now the conventional definition of capital. By human capital, I mean knowledge, skills, attitudes, aptitudes, and other acquired traits that contribute to production. As is true of physical capital, the acquisition and maintenance of human capital involves an economic cost and promises a future return which may be spread over a period of many years. The desire to realize this future return may be assumed to be the principal motive for incurring the costs involved in creating and maintaining physical capital but seems not to be to the sole motive for doing so. Outlays that add to human capital by increasing the productive capacity of human beings are often, but by no means always, motivated by the desire to increase income. The most significant difference between physical and human capital is that human capital is not property under prevailing institutions and cannot be bought or sold.

In line with these definitions, investment or capital formation is taken to consist of the devotion of resources to making additions to the stock of physical capital and human capital. Capital formation includes not

only improvement of land, construction of buildings, acquisition of durable equipment, and accumulation of stocks but also part of the community's outlays for education, training, public health, improved nutrition, and research. In principle, both physical capital and human capital can be valued by discounting the expected future income from them, and rates of return on both types of investment can be computed.

Admittedly, many conceptual and measurement problems are raised by an attempt to broaden the definition of capital and investment. Difficulties of imputation and allocation of costs and of valuation of returns have no doubt weighed heavily in the decision to exclude human capital from existing statistics.[1] I suggest, however, that we are inclined to exaggerate the difference in difficulty of compiling estimates of the two kinds of capital formation. Because of the wide use of statistics of physical capital formation, we sometimes forget that certain of the assumptions and methods underlying the estimates are debatable. One convenient but questionable procedure is the valuation of capital goods at cost regardless of the source of demand or the prospective efficiency of operation. If we stop to reflect, we may have qualms about including in capital formation the full cost of a new presidential palace in a country ruled by a dictator or of a steel mill in a country that lacks coal, iron ore, and know-how. On the other hand, estimates of capital formation commonly omit or cover incompletely items such as small farmers' efforts in improving their land by clearing, drainage, and fencing. These additions to productive capacity, although individually small, may be important in the aggregate in an agricultural economy.

Roles of Physical and Human Capital

Much effort has gone into the preparation of estimates of capital-output ratios and other measures of the contribution of physical capital to past economic growth and of requirements for future progress. Some investigations reveal considerable variability over time in the relation between physical capital and output, but none of them suggests any grounds for doubting that large additions to the stock of physical capital are needed to support economic progress.

It is significant, nevertheless, that the growth of output in advanced economies cannot be fully explained by increased inputs of physical capital and labor. For example, the proportion of increased output attributable to measured increases in the amount of labor and physical capital employed has been estimated at 50 to 60 per cent in the four largest industrial countries (France, Germany, the United Kingdom, and the United States) during the forty years prior to World War I

[1] United Nations, *Concepts and Definitions of Capital Formation* (Studies in Methods, Series F, No. 3, 1953), p. 8.

and at only about 30 per cent in the United States over the period 1869-78 to 1944-53.[2] Technological advance no doubt contributed greatly to the growth of output. Another consideration is the possibility that the available statistics greatly understate capital formation because they omit human capital.[3]

Evidence on the role of human capital is mainly qualitative in nature. To be sure, certain crude statistical observations can be made that suggest the importance of human capital. There are, for example, fairly close correlations between income per head and characteristics such as literacy, nutrition, and life expectancy. Of course, these correlations, like others, do not clearly indicate the direction of causation. The social and physical traits are doubtless partly a result rather than a cause of high income, and to some extent expenditures for their acquisition and maintenance must be regarded as consumption rather than capital formation. But it can hardly be maintained that causation flows only in one way. Better education and health lead to higher income.

Although both physical capital and human capital are essential for progress, human capital must be accorded priority in the sense that a certain minumum of it is a prerequisite to successful use of physical capital. It will be conceded, I think, that the most advanced physical plant and equipment would have virtually no economic significance if bequeathed to a truly primitive community. The physical capital goods would rust and decay; some few items would be devoted to uses quite different from those for which they were intended. As Veblen said, technological knowledge and skills form the community's "immaterial equipment" or "intangible assets" without which physical capital cannot be productively employed. Without this immaterial equipment, or human capital, physical capital would not be a means of production but "simply raw materials, somewhat deranged and impaired through having been given the form which now makes them 'capital goods.' "[4]

A primitive society is of course an extreme case. But there is ample evidence that societies at intermediate stages of devlopment have many problems in adapting to their use the technology and physical capital that are imported or constructed locally with the aid of foreign engineers and contractors. Output is often disappointing, and poor maintenance of plant and equipment is common. Such experience has led to the opinion that many underdeveloped countries do not have the ca-

[2] Jan Tinbergen and J. J. Polak, *The Dynamics of Business Cycles* (Univ. of Chicago Press, 1950), p. 128; Moses Abramovitz, "Resources and Output Trends in the United States Since 1870," *A.E.A. Papers and Proceedings,* May, 1956, pp. 5-23.

[3] Abramovitz (*op. cit.*, pp. 12-13) calls attention to the "chronic understatement of investment" because of the omission of expenditures for health, education and training, and research.

[4] "On the Nature of Capital," in *The Place of Science in Modern Civilisation* (Viking Press, 1942), pp. 325-345.

pacity to absorb large amounts of physical capital even when it can be obtained from abroad on favorable terms. The lack of absorptive capacity is often due to inadequate supplies of suitable labor, which reflect past deficiencies of investment in human capital.

Rapid growth requires large investments in both physical capital and human capital. A properly balanced development program should make provision for both and should attempt to select projects that promise roughly equal rates of return on the two forms of capital.

Measures to Increase Physical Capital

Measures to increase the stock of physical capital relate to social overhead capital and enterprise capital. A large stock of social overhead capital consisting of facilities such as transportation systems, communications, water supply, and sewerage seems indispensable to progress. These facilities form an essential basis for the efficient use of enterprise capital. In some countries there may have been a tendency to underestimate the importance of social overhead capital in the past, but this does not appear to be true in many cases today. Most development programs include a large proportion of overhead capital, the greater part of which is ordinarily provided by government. Development plans commonly make provision also for investment in large-scale enterprises such as cement plants, electricity generation and distribution systems, and steel mills.

A problem of balance is raised by the often observed tendency of underdeveloped countries to concentrate on large-scale projects, as regards both social overhead capital and enterprise capital. There is still a tendency to neglect the accumulation of items such as efficient hand tools, modest improvements to agricultural land, rural housing, and family or village water supply and sanitary facilities. The neglect of small-scale investment reflects an inadequate appreciation both of the importance of such investment and of the possibilities of stimulating it. The most promising means of promoting small-scale investment in rural areas appears to be the approach exemplified by the community development projects in India and agricultural extension programs such as are being introduced in some parts of Latin America.

An advantage of small-scale investment is that it does not require an elaborate organization for obtaining and transferring savings. The financing of large-scale government and private projects is likely to depend to a great extent on compulsory saving through taxation and the mobilization of voluntary savings through financial intermediaries. The commercial banks can offer only a limited amount of noninflationary finance, and in many underdeveloped countries this credit is devoted largely to the financing of import and export bills and other commercial

loans to a narrow class of borrowers. Much attention has been given, therefore, to the possibilities of stimulating saving through the expansion and improvement of nonbank financial institutions and instrumentalities. Although these institutions are useful, I believe that there has been a tendency to exaggerate what can be accomplished by promoting them in the early stages of development. Nonbank financial intermediaries are likely to appear once a sizable class of savers and qualified borrowers comes into being.

Perhaps the most promising type of institution in many countries is something on the order of the system that has been popular in several Latin-American countries whereby specialized banks issue mortgage bonds or cedulas to facilitate the flow of individual savings into real estate mortgages. Economists are often unenthusiastic about such institutions on the grounds that residential construction tends to be relatively excessive in underdeveloped countries in any case. Housing, however, must be expected to be an important component of investment in any country with a rapidly growing population and increasing urbanization. When excessive construction activity occurs, it is usually induced by inflation. Mortgage bonds or arrangements similar to those offered by North American building and loan associations have considerable appeal to persons with only limited knowledge of finance, and their availability may help promote the saving habit.

The step that governments of underdeveloped countries usually seem to be least willing to contemplate is the offer of higher rewards to savers. In many underdeveloped countries nominal rates of interest paid on savings deposits, government securities, and similar obligations are lower than rates prevailing in some of the richest countries. Often the maximum rates of interest that banks and other institutions can pay are fixed at low levels by law or regulation. When this situation is combined with a chronic tendency for prices to rise, it is not surprising that much of the community's savings is channeled into gold, foreign exchange, and residential construction. One does not have to go as far as Jeremy Bentham did in his famous *Defense of Usury* to question seriously the wisdom of attempts to hold interest rates at artificially low levels.

A proposition that has gained wide acceptance is that developing countries need to raise the marginal rate of saving well above the average rate. It is not feasible or desirable to attempt to reduce the meager consumption of the masses and the consumption of the rich may be small in the aggregate or inviolable in the short run. In these circumstances the only way to obtain a large amount of additional savings is to make sure that a large fraction of any increase in income per head is saved.

The idea that development can be achieved merely by saving a large part of increases in income is enlightening and hopeful. Unfortunately, however, this proposition, like other rules of conduct, is not self-executing. It does not even offer a clear guide to action. Some increase in the ratio of voluntary saving to income may occur as income rises, but this increase is likely to be small. One influence that tends to keep down the rate of voluntary saving is the so-called "demonstration effect"; that is, the stimulation of desires as a result of contact with higher standards of living. In the underdeveloped countries this operates internally, as rural people come in contact with the cities and the amenities enjoyed there, and on the international plane, as knowledge of conditions in more advanced countries spreads. In addition to whatever contribution can be obtained from improvement of financial intermediaries and more realistic interest rates, voluntary saving may be stimulated by policies that offer people opportunities for investing in small farms and other enterprises and for investing in themselves and their children. Investment in the human agent, particularly in education, can be made to respond to a demonstration effect if opportunities are present.

The state may be able to capture by taxation a part of increases in income per head. It would not be desirable even if it were feasible, however, to tax at differentially heavy rates all increases in income. To do so would decrease incentives for the reallocation of resources that is required for development. The most acceptable form of special taxation of increases in income seems to be betterment taxes (or special assessments in American terminology) on owners of property which is benefited by irrigation, drainage, flood control, and similar works. Adequate charges for services and commodities supplied by government bodies are also important. Beyond this, the problem is the common one of improving the structure and administration of conventional taxes.

Measures to Increase Human Capital

The financing of additions to the stock of human capital usually falls largely to the state and the family. The main reason is that human capital, not being property, cannot be owned jointly by the person in whom it is embodied and others and cannot serve as collateral for a loan. Throughout the world there has been for some time a strong trend toward increasing the state's share of the cost of human capital while reducing the family's share.

Perhaps the most important measure to increase the stock of human capital is education. Capital formation by means of education is not restricted to vocational and technical training. Literacy is basic to the clerical skills that are essential for the record-keeping and control sys-

tems that are indispensable for large-scale enterprise and modern government. A high rate of literacy also greatly facilitates all kinds of vocational training, supervision of labor, and the development of attitudes that are conducive to steady and efficient work in urban-industrial occupations. Mastery of reading and writing and other fundamental education open the way for a backward country to share the technical heritage of the world.

Countries with large amounts of unused land may be able to expand production for some time by application of labor and traditional methods at the extensive margin. Sooner or later, however, development will be limited by lack of trained personnel unless timely steps are taken to improve education. High-level technicians can be imported during the early stages of development, but it is economically impossible to import a sufficient number of persons in the middle grades and to do so would cause grave social cleavages even if it were feasible. After all, one of the objectives of development is to give local people opportunities to move into more skilled and productive employments.

The problem of the educated unemployed and the threat to political stability arising from their discontent are sometimes mentioned as reasons for being slow in expanding formal education in the less developed countries. The existence of this problem can be traced to cultural values that may present obstacles to economic progress. It may be that the problem can be better solved by extending educational opportunities than by restricting them. When literacy is general and graduation from a secondary school does not mark a person as a member of an elite, those who enjoy these advantages will be less inclined to disdain manual work. Even at the university level it may be possible to break down traditional prejudices by emphasizing specialized and technical training in the universities and thus extending their prestige to occupations which graduates now dislike entering because they have no prestige.

In addition to general education, public health is a field in which expenditures that are usually motivated primarily by humanitarian considerations nevertheless have important implications for productivity. Some health programs, such as the control and eradication of malaria, have achieved dramatic reductions in morbidity and mortality rates in a short time and at no great cost. Programs for mass immunization against certain epidemic diseases are similar. Other programs are costly and slow.

The economic significance of reductions in morbidity may differ somewhat from that of reductions in mortality. A decrease in the rate of sickness among a population of any given size offers a clear opportunity for gain because it raises productive capacity by making pos-

sible more regular and efficient work and—by assumption—does not increase the number of mouths to feed. The amount of the gain realized from an increase in available labor-time of course depends on how effectively it can be combined with other resources. In extreme circumstances the marginal product of additional labor may be zero, but there are, in my opinion, only a few countries in which it can be plausibly argued that these extreme conditions prevail. There appears to be considerable scope for economic gain through reduction in sickness in most underdeveloped countries. Outlays for this purpose perhaps should not be classified as capital investments, since a large part of the return is realized immediately rather than in the future.

The economic consequences of reductions in death rates are complex. An increase in life expectancy may be regarded as an addition to the absolute size of the stock of human capital. This may not, however, contribute to progress, in the sense of a rise in income per head, unless accompanied by a disproportionate growth in the stock of physical capital or major changes in techniques. One reason for this is the principle of diminishing returns—a leading tenet of the "dismal science." Another reason is that the greatest reduction in mortality usually occurs among infants and children. Unless the birth rate falls at the same time, the ratio of the dependent population to the economically active population, which is already high in nearly all underdeveloped countries, may rise still higher. An increase in life expectancy, nevertheless, offers a society important additional opportunities because it means that the potential working life of each individual is longer relative to the necessarily unproductive years of childhood and infancy. These opportunities may be used to increase output or to permit later entrance into the labor force and earlier retirement.

I do not intend to suggest that the amount spent on general education and public health should be determined solely by reference to a comparison of costs and returns in the form of additional income. Certainly there are other and more fundamental reasons for providing these services. Noneconomic considerations may justify carrying expenditures on education and health beyond the point at which the rate of return, narrowly construed, equals that from other outlays. Surely there is not a good case for stopping short of that point.

Much more needs to be done in devising measures of costs and returns in respect of investment in human capital. Although a beginning has been made, the work is still at a very early stage even in the countries that are comparatively well provided with the data on which such estimates can be based. Until estimates of prospective returns are available for investments in both physical capital and human capital, many important decisions concerning the use of resources for economic de-

velopment will have to rely on qualitative evidence of an indirect or circumstantial nature or on intuition.

Without waiting for the completion of the lengthy investigations that will be required to bring information on human capital to parity with that now available on physical capital, economists and policy-makers can perhaps begin to try to introduce human capital more systematically into their growth models and development plans. These efforts may lead to a reconsideration of the usefulness of analytical devices such as capital-output ratios which take into account only physical capital and savings rates which equate savings with investment in physical capital in the monetized sector of the economy. Equally, the general acceptance of a broader capital concept would suggest that government capital budgets, as now formulated, are seriously incomplete and possibly misleading. Certain government activities now classified as welfare measures rather than development programs would have to be reassessed. Generally speaking, wider recognition of the importance of human capital could be expected to enhance the role of the state in development programs. In view of the large responsibilities already being assumed by governments in many underdeveloped countries, this would underline the need for stronger revenue systems and better public administration.

ACCOMMODATING ECONOMIC CHANGE IN UNDERDEVELOPED COUNTRIES

By William H. Nicholls
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"Will Fortune never come with both hands full . . . ? . . . She either gives a stomach and no food; . . . or else a feast and takes away the stomach."
—Shakespeare, *King Henry IV*

As an economist I find anthropologists particularly annoying because they almost always seem to emphasize all the reasons that economic development is impossible or at least undesirable. The national motto which appears on Brazil's flag, *Ordem e Progresso* ("Order *and* Progress") must have been composed by an economist. An anthropologist would surely have made it "Order *or* Progress." But, if economists take the more optimistic position, perhaps it is because they too easily take for granted that underdeveloped countries already have a technological base, a value system, an efficient and reasonably democratic and honest government, and social and economic institutions which are in fact characteristic only of the modern capitalistic economies of the world.

Obviously I protest too much. Even so, it behooves us as economists to recognize more fully those aspects of the social and political environment which may hamper economic development and to suggest some of the necessary changes in this environment if economic development is to proceed at an optimum and ultimately self-sustaining rate. I would particularly like to focus attention upon the following sociopolitical problems: nationalism, public versus private enterprise, maintaining order and stability, centralization of government, geographic concentration of the benefits of economic progress, and physical versus human development.

Using Nationalism Constructively

In many instances, the creation of a spirit of nationalism is a prerequisite to the initiation of economic progress in underdeveloped countries. In its absence, the loosely knit but extensive Ottoman Empire became the "sick man of Europe." Only after Turkey's borders were reduced to the relatively homogeneous population of Anatolia was such a remarkable leader as Ataturk able to weld its entire people into an integrated unit with common ideals and aspirations. Even the much vaster and more heterogeneous subcontinent of India was able to achieve, as a by-product of its anticolonialism, the constructive na-

tionalism required to support its drive for economic development. On the other hand, in many of the African colonies of the European powers, the spirit of nationalism is still either nonexistent or too embryonic to provide an environment conducive to significant economic development.

Unfortunately, once created, the spirit of nationalism frequently creates excesses in its wake, particularly in terms of antagonism to much-needed private foreign capital and of extreme protection of inefficient domestic enterprises. To be sure, in Latin America and elsewhere, the fear of economic imperialism is not without substantial historical foundation. Too often local representatives of foreign businesses have interfered with internal political affairs, have identified themselves closely with dictators and narrowly-based oligarchies, and have, even over several generations, maintained their little colonies without any significant degree of assimilation. On the other hand, with their swelling nationalism, the underdeveloped countries have frequently tended to take a dog-in-the-manger attitude toward foreign capital, refusing it entry to explore and develop their natural resources and at the same time lacking the capital and know-how to do the job themselves. The arrested development of the petroleum resources of Brazil is a familiar example.

On the side of the capitalist countries, there is a need for their business leaders to develop in their foreign operations a stronger philosophy of economic statesmanship, accepting the legitimate aspirations of the underdeveloped peoples for economic progress and greater political and economic independence and seeking to find areas of mutual interest by which these aspirations may most quickly be attained. Without sacrificing reasonable returns on their investments, such businesses can frequently be among the most effective purveyors of technical assistance to industry, developers of indigenous business leadership and a skilled labor force, and powerful catalysts in the development process. (Sears, Roebuck's operations in Latin America offer an excellent example.)

On the side of the underdeveloped countries, it is equally vital that they contain their spirit of nationalism, lest it be carried to destructive extremes. For one thing, they need to recognize the extent to which the old stereotypes of political and economic imperialism are no longer applicable to the capitalist countries and, perhaps more important, to recognize for what it is the new wolf in sheep's clothing—Russian imperialism. They must of course attempt to create the conditions—such as political stability, the sanctity of foreign-held property against confiscation, and the right of repatriating profits—which will attract private capital from abroad. While they need no longer grant foreign capital special economic, legal, or political privileges, they would be well advised to guarantee that—in the application of exchange controls,

tax laws, and labor and antitrust policy—foreign and domestic companies will be treated according to the same rules. In other words, as a general policy, nondiscrimination should substitute for discrimination for or against foreign capital.

Encouraging Private Enterprise

A closely related problem is the place of public and private enterprise in economic development. However devoted in principle they may be to private enterprise, American economists are usually forced to concede that, in most underdeveloped countries, a much heavier dependence upon public enterprise is essential to get a stagnant economy off the ground. The reason is the abysmal lack of private entrepreneurial talent in such countries and the difficulty of filling the vacuum quickly, even if the need for it is recognized. Unfortunately, in underdeveloped countries, the accepted scale of social prestige places the landowner, the church official, and the military leader at the top and the man of business far down the line. Under such circumstances, it is usually the members of minority groups—Jews in Southern Europe, Armenians and Greeks in Turkey, Syrians in Brazil, Chinese in Southeast Asia, etc.—who have filled this function insofar as it is filled at all. Clearly, this fact would indicate the need for underdeveloped countries to try to find means of elevating constructive business pursuits to a higher prestige level in the social hierarchy and of diverting the experience and talents of the minority groups from commerce and trade to manufacturing and other more constructive activities. Too often, a by-product of nationalism is covert or overt reaction against such minorities, long before the dominant social groups are ready to supply entrepreneurial talent from their own ranks.

Economic development via public enterprise faces serious problems. Being removed from the cleansing effects of bankruptcy in a free market, inefficient and unsuccessful public enterprises can be, and frequently are, subsidized indefinitely to make up their recurring deficits. Similarly, profitable public enterprises, instead of being expanded to meet unsatisfied consumer demand, may be operated to maximize monopoly revenue for the government. State enterprise can theoretically avoid such results by simulating a system of profit-and-loss accounting to serve as an important guide in the allocation of resources and as a criterion for efficient management. Unfortunately, however, in underdeveloped countries the art of public economy and public administration is usually as backward as the art of private business management. More important, even though public enterprise is used for reasons of expediency rather than ideology (e.g., in Turkey), the effects upon the development of private enterprise may be almost as deleterious.

This follows because, once established, public enterprises as a hand of government are in a position to enjoy special competitive advantages —such as tax exemption and easier access to credit, foreign exchange, import licenses, raw materials, and markets—over private enterprises in the same field. Furthermore, state development of particular industries is likely to be executed under the authority of omnibus statutes or decrees which may carry the threat of expropriation of private enterprises or leave ill-defined the intended scope of public enterprise.

It is therefore essential, insofar as public enterprise is used as a means of achieving economic development, that the scope of public participation be clearly defined, explicitly reserving all other fields to private enterprise; that in industries consisting of both public and private firms special privileges for the public sector should be scrupulously avoided; and that public administration of state economic enterprises give more attention to effective co-ordination of investment policies and the training of efficient business managers for private as well as public employment. It is also important that the government should proceed very cautiously in throwing the financial burden of such social overhead items as worker training, health, housing, etc., on private firms before they have achieved sufficient financial strength and stability to absorb such costs without threatening their fiscal success.

Maintaining Order and Stability

Of paramount importance to economic development is the achievement of a certain degree of order and stability in both political and economic affairs. The case for order and stability is again not all black or white. By its very nature, the initiation of economic growth is impossible if traditional social and economic institutions remain unchallenged and unchanged. And, as economic development proceeds apace, it can become self-sustaining only if social and economic institutions are created or adapted to the needs of the changing economy. Thus, absolute order and stability must mean *status quo*, not economic development. On the other hand, there must be enough order and stability so that the people can feel reasonably secure in person and property and so that entrepreneurs and men of wealth do not face uncertainties which make longer term forward commitments imprudent.

Because underdeveloped countries are so largely agricultural, land ownership patterns offer an excellent illustration of the stability problem. In countries in which agricultural land is typically held in peasant-owned small holdings, the economic problem of achieving farm enlargement is very difficult of solution but the sociopolitical problem of achieving stable, broadly-based government and sturdy, self-respecting rural people is more easily solved. Under such circumstances, it is im-

portant that public agricultural-development policies be largely directed toward helping the peasant owner-operator produce more from his few acres and expanding nonfarm job opportunities rather than toward forced-draft introduction of large-scale farming techniques and a premature "enclosure" movement. Thus, the nineteenth-century Japanese experience offers a better model for maintaining order and stability in agricultural progress than does Turkey's recent overemphasis on farm mechanization or Russia's bloodstained collectivization program of 1930-36.

More typically, however, underdeveloped countries are characterized by extremely great concentration of land ownership and by the sociopolitical dominance of the landed class. Where large landholdings are prevalent, their exploitation may take several forms. Most often, particularly in the Middle and Far East, they are owned by an urban elite and operated in many small holdings on a sharecropping basis, with the landlord making little or no significant contribution to the productive efficiency or well-being of his many cultivator families. Here the very backwardness of the nation's agriculture, usually in combination with severe pressure of the population upon the food supply, makes of land monopoly a serious social problem since land still remains such a dominant agricultural input. And here, perhaps, one can make the best case for land reform by which ownership is transferred to the man actually on the land. In other cases, particularly in the tropics, large landholdings may be operated as relatively efficient and well-capitalized plantations, specializing upon particular export products which are among the country's principal sources of foreign exchange. While such plantation organization creates many serious social and political problems, particularly in its tendency to perpetuate a menial and low-quality labor force, the economic basis for land reform is considerably weaker. Finally, particularly in the Latin-American countries, extremely large landholdings may take the form of *latifundia,* held in a state of idleness or largely underdeveloped primarily because of property taxes too low to reflect fully the prevailing more productive alternative uses of such land.

Under these various circumstances of large landholdings, the political awakening of an underdeveloped country almost inevitably points to the need for land reform. Whatever the merits of land reform as a matter of elemental social justice, however, its revolutionary nature does not recommend it except as a policy of last resort. Instead, considerations of order and stability weigh heavily on the side of evolutionary adjustments such as legal reforms in landlord-tenant relations, higher taxes on land and the income therefrom, improved social services for agricultural workers and smallholders and their families, and de-

vices to turn the wealth of large landholders to socially productive uses instead of conspicuous consumption. Historically, of course, such vital but less drastic reforms have seldom been possible in underdeveloped countries, because large landed interests have dominated their governments and have used their political power to resist ameliorative social legislation on matters involving agricultural land and land tenure, maintaining political order and stability only in those forms which favor their intrenched interests. Unlike the British (or Southern U. S.) aristocracy, they have almost never accepted the doctrine of *noblesse oblige* or recognized the wisdom of yielding to sociopolitical pressures at least enough to preserve their position of political leadership against electoral or even revolutionary overthrow. (Had the landed oligarchy of Argentina done so, they might have avoided Peron's revolution, which so effectively wrecked the rich Argentine agricultural economy.)

While unpatriotic and antisocial behavior by a landed oligarchy feeds the fires of radicalism, the threat or realization of radical reform tends to compound the problem. Thus, the expectation of land reform hastens the flight of capital from the country and encourages rapid disinvestment of capital in existing agricultural enterprises. Furthermore, the actual application of land reform, while sometimes increasing the incentives and levels of living of the families on the land, tends to create more economic problems than it solves. Thus, once land reform becomes politically possible, it almost inevitably is carried too far in the form of excessive subdivision of land ownership, greatly increasing the barriers to the achievement of a technologically advanced and productive agriculture. (We bar here, of course, the fraudulent Communist solution of following land redistribution by forced collectivization, once the political support of the cultivator class is no longer needed to overthrow the dominant landed class.) Furthermore, the net production effects of land reform are likely to be unfavorable due to the peasants' lack of capital and know-how and their tendency to consume more and market less. For example, the subsistence sector of agriculture may be strengthened at the expense of the supply of industrial raw materials, food for urban consumers, and export products vital to foreign exchange. Thus, achieving the optimum contribution of agriculture to economic development requires the attainment of a sociopolitically difficult compromise between the absolute order and stability of an ultimately intolerable *status quo* and the disorder and instability of revolutionary reform.

Finally, a discussion of the need for economic order and stability would not be complete without mentioning the familiar problem of inflation, so characteristic of underdeveloped countries whose desire for a rapid pace of investment constantly tends to outrun their limited

resources. Inflation and the expectation of inflation undermines the community's will to save and encourages the holding of wealth in foreign accounts. It creates price and profit distortions which divert resources into less essential activities such as speculative real estate investments and inventory accumulations rather than into long-term investment in productive projects. Inflation also stimulates imports and hampers exports, thereby affecting the balance of payments adversely. It bears particularly heavily upon the civil servant class, the maintenance of whose quality is even more important, given the typically greater relative importance of state intervention in underdeveloped countries. Thus, sound economic development requires constant attention to the establishment of monetary, budget, and fiscal policies which will maintain a relatively high degree of general monetary stability.

Achieving Greater Local Autonomy

One of the greatest political barriers to economic development is the extent to which the governments of underdeveloped countries are overcentralized. Even where such governments have taken on democratic forms, they have usually left little room for provincial or local autonomy, either because of their previous autocratic nature (Turkey) or because of an earlier history of decentralization too great to sustain effective national development (pre-Vargas Brazil). Often the effect is a paradoxical combination of cynicism and even antagonism toward central government and an almost completely apathetic dependence upon it for all progress.

The cynicism of Brazilians may be illustrated by the spontaneous ripple of laughter which I heard sweep through Rio's theaters in 1947 whenever President Dutra's picture appeared on a newsreel. Antagonism toward government is a frequent characteristic of the people of underdeveloped countries. Ecuador's ambassador to London recently explained Vice-President Nixon's violent reception in Latin America by saying that there, where "government is Public Enemy No. 1," Nixon identified himself with "government," whereas the Communists are very successful in identifying themselves with "the people" as opposed to "government." In Turkey or India, after centuries of experience during which government meant either a corrupt and ruthless tax collector or a marauding army which requisitioned scarce food and draft animals and conscripted the village youth, the peasant finds it difficult to think of government as representative or benevolent. Small wonder that, in the Turkish language, the equivalent of the word "administration" is said to convey only the concept of a "command" relationship of a military kind.

Under such circumstances, government officialdom easily acquires an elite psychology whereby it seeks to lead and to influence by command rather than by example and persuasion. In my opinion, this elite complex is a particularly important barrier to effective agricultural extension and other adult education programs. Even within the administrative hierarchy, the relationship of superior to subordinate often approaches that of master and slave. Finally, the democratic concept of voluntary associations of farmers, businessmen, and workers for promoting matters of mutual political or economic interest is frequently reversed in underdeveloped countries, such associations being organized and dominated by the central government as a means of control over private groups rather than serving as the latter's means of both helping themselves and of influencing government in their behalf. Such strong tendencies toward centralization of government, combined with a tradition of government as enemy, are severe barriers to the development of effective and vigorous local leadership.

To the American, the apathy of local leadership is one of the most striking characteristics of underdeveloped countries. In Turkey or India, for example, one must look long and hard to find particular villages which have carried out community improvements—such as watering places, small irrigation systems, and roads—which contribute much to common well-being without requiring resources beyond the strong hands and backs of the villagers themselves. Where such villages exist, it is usually because an exceptional village headman or school teacher has been able to indoctrinate the villagers with a rare spirit of self-help, in the absence of which little progress can be stimulated from a central source. In the older parts of Brazil, local leadership is also usually apathetic, although in the frontier towns of the hinterland there are strong stirrings of civic pride and a "booster" spirit despite a degree of centralization of public finance which tends to leave the *municipio* fiscally impotent.

Thus, one of the greatest needs of most underdeveloped countries is a policy of encouragement of greater local autonomy and local responsibility and the creation of conditions under which local community leadership can be discovered and become effective. To achieve such ends, such countries must first recognize that self-sustaining economic progress cannot be imposed upon an unwilling people from above. Instead, the will to progress must come to be shared by the great masses of the people, who themselves become active participants under strengthened local leadership and local responsibility. The heart of the solution must lie in the battle against illiteracy and in the development of an effective agricultural extension service which will emphasize help-

ing village people to help themselves. Turkey's Village Institutes, in which promising youths receive secondary training at government expense as a prelude to returning to their villages as primary school teachers, are worth emulating in this connection. While much too ambitious and diffuse for its present resources, India's community development program is sound in its objectives and, over a generation or two if not during the present five year plan, holds much promise in developing effective community leadership. In these and other programs, however, local government representatives must be imbued with a spirit of service, a belief in the dignity of labor, and a zeal for successful communication by demonstration, example, and persuasion if they are to succeed in overcoming the traditional conservatism and suspicion of the rural masses. Finally, in the interests of local initiative and responsibility, the central government should help provincial and local authorities to carry a greater part of the administrative burden of governmental functions while sharing more equitably in the total tax receipts. Thus, the central government should be a catalyst, not a cataclysm, in the local community.

Toward Greater Regional Balance

Just as underdeveloped countries are usually characterized by overcentralized government, so they tend to have a high degree of geographic concentration of such benefits of economic development as they may already enjoy. This outcome is probably in large part the result of excessive centralization of public finance, which tends to drain the entire country of taxes and to concentrate public expenditures in the capital city and a few other favored localities. While economic development must start somewhere, requiring considerable concentration of productive investments on those areas which given promise of the quickest response to initial stimuli, in practice investments often tend to take the nonproductive form of elaborate public buildings, boulevards, officers' clubs, and "monuments" which contribute little or nothing to the development process. The Latin-American countries (Mexico is a notable exception) have been particularly prone to make this error, concentrating their resources in their capital city to the neglect of their vast agricultural hinterland. The result has usually been overurbanization of the population, inadequate attention to improving transportation and communication, and a stagnant agriculture.

Brazil offers a particularly interesting example. Only in recent decades, after some four centuries of existence, has Brazil's vast but sparsely settled interior begun to fill up by substantial migration. Why was the settlement of this subcontinent so long delayed? In part un-

doubtedly because of the initial distribution of the land via huge royal grants to a relatively few individuals favored by the Portuguese crown, the slowness of the Republic to develop a public-land policy comparable with the United States' Homestead Act, the allergy of Portuguese immigrants to the initial hardships of frontier agriculture unless it offered a quick financial bonanza, and the failure to develop an integrated transportation system.

Perhaps of equal importance, however, was the continuing political dominance of the densely populated seaboard (a phenomenon common in underdeveloped countries) through Brazil's failure to create new "interior" states. Of Brazil's twenty-one states, only three are landlocked. Most of the other states extend from seaboard to the interior but their representatives in the National Congress have undoubtedly tended to represent the "old" rather than the "new" parts of their respective states. As a result, the sparsely settled interior regions of Brazil have not enjoyed the Congressional overrepresentation which, as new states gained three Senators each, might have created conditions more favorable to quick settlement. In contrast, the United States—by combining a more democratic land-settlement pattern and vast internal improvements with a rapid increase in the number of sparsely settled interior states—settled an entire continent with amazing dispatch. Surely the notorious political abuses of the Rocky Mountain states' equal representation in the U. S. Senate have been a small price to pay for this favorable outcome. In the process, the benefits of U. S. economic development have been far less concentrated geographically than they might otherwise have been.

Despite these historical shortcomings, Brazil is at last undergoing a greater geographical dispersion of its economic development. The recently accelerated private settlement of western Parana, Mato Grosso, and Goiaz and the public development of the San Francisco River Valley are favorable signs. The current project to move the national capital from Rio de Janeiro to interior Goiaz on balance appears, however, to be distinctly unwise. Psychologically, there is much to recommend shifting the capital away from lethargic Rio to the much neglected but vigorous interior, as Ataturk's parallel decision to move the capital of Turkey from Istanbul to Ankara proved. But the costs would appear to outweigh by far the benefits, considering Brazil's rampant inflation, its pressing alternative needs for productive investments, and its proclivity for conspicuous display in public outlays. In any case, however, it is to be hoped that Brazil's new concern for development of its more backward regions will not die aborning. The Paulista's complaint that "Sao Paulo is the locomotive pulling the other twenty cars

[states] of Brazil," while exaggerated, contains a grain of truth. Certainly, the progressive state of Sao Paulo (and much of southern Brazil) is well beyond the threshold of self-sustaining economic development. But most of the other states (particularly of the north and northeast) are stagnant and will continue to be a serious drag on the more advanced southern states unless much more vigorous efforts are made to awaken them from their traditional apathy by well-designed public regional development projects. Such projects will require much more attention to agricultural development, transportation and communication, and the industrialization of rural areas than the forced-draft urban industrialization programs of Brazil and most other underdeveloped countries yet admit.

Improving the Quality of Human Resources

One of the greatest problems of economic development is the extent to which underdeveloped countries emphasize the "showcase" project, which typically sacrifices the intangibles of human development on the altar of brick and metal. The lavish development of the capital city, already mentioned, is one good example but there are many others. Such conspicuous public consumption is nothing new, as the Egyptian pyramids, the Taj Mahal, the Moscow subway, and the draining of Italy's Pontine marshes will attest. I have seen it in Brazil not only in the city of Rio but in Sao Paulo's palatial Schools of Practical Agriculture, which were built too extravagantly to leave adequate funds for the support of faculty and the intended students, the sons of poor agricultural workers. It is reflected in the attitude of a former mayor of Baia, who told a local public health official that he was not interested in sewers because, being under ground, they could not be seen by the voters.

The showcase psychology can also be seen in the strong overemphasis on mechanization of agriculture in many public agricultural development programs (e.g., Turkey's) and in the tractor viewed as a consumption good, which the private Brazilian *fazendeiro* keeps constantly polished through the efforts of two or three of his workers and the Turkish peasant uses to pull a wagonload of countrymen on a weekend outing. It is apparent in the demand for the latest methods of automation where factory labor is plentiful and capital dear and in the cry for more medical buildings and equipment when present medical facilities are unmanned for the lack of trained doctors, nurses, and technicians.

Such examples make abundantly clear that the underdeveloped country's approach to modern technology typically takes the superficial form of "gadget worship." Frequently such an attitude is further aided

and abetted by foreign technicians who lack the economic perspective, good judgment, and flexibility to see the need for adapting Western technology to the very different resources, relative factor prices, and institutional arrangements of the country seeking sound technological advice. Turkish Anatolia cannot overnight become another Kansas or Brazil's Volta Redonda a second Pittsburgh. Yet, even the poorest country can, by taxing its whole population heavily in order to raise impressively the welfare of a favored few, produce an isolated showcase to impress the foreign visitor. But genuine self-sustaining economic development is characterized by the avoidance of gadget worship and showcases and rare but wise is the national planner who realizes it.

Given this strong proclivity to acquire the tangible symbols of the advanced countries' success, the leaders of the underdeveloped countries usually completely ignore the intangibles which are the true foundation of Western economic progress. Of these intangibles, probably the most important are those forms of capital which are invested in the education, technical skills, health, and general productivity of the human population. In most underdeveloped countries, the attitude toward the human resource is nearly as misguided as the African chief's who reckons his wealth in numbers of cattle, without regard for their quality or productivity.

In all of these matters, the Japanese offer to the underdeveloped countries some very valuable lessons in sound economic development, their success being all the more remarkable because they achieved so much without (except for the fruits of their military conquests) any significant foreign financial assistance. Their early recognition of the importance of such intangibles as the elimination of illiteracy and the application of scientific knowledge to both agricultural and industrial progress bore rapid fruit. At the same time, they did not take over Western technology wholesale but skillfully adapted it to the prevailing pattern of agricultural small holdings and developed small-scale, decentralized industries which could use its plentiful labor supply most economically. True, this development program has not (despite an extremely high abortion rate) solved Japan's population problem. But it has at least put Japan in the economic forefront of the population-ridden Orient.

Conclusion

More than economists commonly recognize, the social and political milieu in an underdeveloped country is an important determinant of the appropriateness and probable success of particular economic development policies. If properly used, sociopolitical factors—such as

nationalism, public enterprise, political (particularly agrarian) reforms, centralization of political power, geographic concentration of development programs, and even (*as a means of strengthening national pride*) an occasional showcase project—have a constructive role to play in facilitating economic growth. In practice, however, such factors tend to be carried to excess, seriously obstructing the achievement of effective, orderly, and ultimately self-sustaining economic development.

If my analysis is correct, Western specialists in economic development—and even more their counterparts in the national planning agencies of the underdeveloped countries—must recognize the need for changing the sociopolitical environment which produces these excesses. Having done so, they must strive to impress upon policy-makers the vital importance of establishing positive public measures which will attract private foreign capital, stimulate domestic private enterprise, maintain a modicum of political and economic stability, encourage more local autonomy and community leadership, spread the benefits of economic development more widely regionally, and direct more investment into human vigor and productivity.

Admittedly, my conclusions are not particularly new and certainly they are not spectacular. In my opinion, however, countries interested in formulating and executing successful economic development programs can ignore them only at their peril.

DISCUSSION

Benjamin Higgins: It is comforting to find that the postwar concentration on economic development is beginning to produce a body of received doctrine. Dr. Harberger's description of the symptoms of underdevelopment fits my own field experience, and I find myself in hearty agreement with his two main conclusions: first, that misallocation of resources, in the sense of a divergence from what would result from the free play of market forces under conditions of pure competition, is a minor aspect of the problem of poverty in underdeveloped countries; and, second, that the hope for "spectacular growth" lies in "improving the quality of the labor force and in accelerating the rate of adoption of cost-reducing innovations." I also approve most heartily his efforts at quantification. The major gaps in our knowledge of underdeveloped countries are still the empirical ones. I am less certain than he that significant upgrading of the labor force can be achieved without adding to the stock of tools and equipment and improving their quality; but this is a question of fact about which it would be fruitless to argue without documentation.

What disturbs me about Dr. Harberger's paper is that "he doth protest too little." His recipe for economic growth is: eliminate monopolistic, political, and capricious intervention with the free forces of the market, and accelerate the application of the best known techniques. My own view is that "misallocation" à la marginal calculus is not only quantitatively unimportant but is very nearly irrelevant to the development problem. I am convinced that Harberger's recipe will not work unless it is accompanied by drastic structural change, involving wholesale transfers of population from peasant agriculture to industry, which market forces alone and unaided will not produce. Such transfers require simultaneous industrialization and agricultural revolution and so necessitate substantially increased capital accumulation and government intervention in the allocation of resources.

Techniques in the industrialized sectors of many underdeveloped countries already compare favorably with those of the advanced countries. What demarcates advanced countries is the ability to feed the populations well, and in some cases even produce exportable surpluses of farm products, with 10 to 20 per cent of the labor force. The techniques that make possible this high productivity in agriculture cannot be applied on the splinter holdings typical of peasant agriculture.

I am inclined to think that "patching the market" will accomplish even less than Harberger estimates, because I do not regard "intervention" as "distortion." Harberger talks of a "poorly organized and disequilibrated labor market"; of credit rationed according to "whims of bankers" rather than going to the "highest bidders" so that "high-payoff uses of credit are denied adequate funds"; his diagrammatic analysis of the costs of tariffs implicitly assumes that pure competition prevails in the economy and that the purely competitive equilibrium position is optimal; he talks as though

any "artificial restraint or market imperfection" involves social loss; he speaks of "new taxes" as "distortions" and of "capricious policies" which interfere with "the natural forces of adaptation." All this leaves the impression that the market left to itself works very well. I would not for a moment deny that bad policy can make the market work even worse than it would when left to itself; but I would deny vigorously that the market by itself will produce rapid economic growth in underdeveloped countries.

The present economic position of underdeveloped countries is for the most part the result of individual, marginal, market decisions. Government intervention had relatively little effect on the pattern of development between the Napoleonic Wars and World War I. Nor was monopolistic distortion particularly marked. Nothing approaches the purely competitive ideal more closely than peasant agriculture. True, the industrializing sectors (including plantation agriculture) were not purely competitive; but they may have been as close to it as technical efficiency permitted. To have had a thousand oil companies in Indonesia and a thousand chrome mining companies in the Philippines would have been patently absurd. The plantations were competitive in the product market most of the time. They were monopsonistic in the domestic market for labor; but since the long-run supply of unskilled labor to the industrializing sector was perfectly elastic and the cost of training fairly constant, the equilibrium position was little affected by monopsony power. When properly cast in terms of time and scale, the Arthur Lewis argument on this point is right. Population growth—which industrialization accelerated—assured to the industrializing sector all the labor it could absorb at wages just above the village norm. And it was the monopolized industrial sector that expanded, not the competitive rural sector.

Thus we must look elsewhere than at market imperfections for the explanation of underdevelopment. I have found it mainly in the "population explosion" and "technological dualism"—at least for Asia. Technological progress in the past has been accompanied by accelerated population growth. It probably will be again in these countries, although for somewhat different reasons. The sector where investment was concentrated was capital intensive, providing far too few new jobs for the increasing population. The additional numbers were absorbed into the peasant-agriculture-and-small-industry sector, where coefficients were variable. Productivity and incomes in this sector consequently failed to rise, and in some countries may even have fallen.

Another part of the explanation lies in lumpiness, indivisibilities, discontinuities, external economies, and indivisibilities of demand stressed by Rosenstein-Rodan and Nurkse; the lumpiness of capital, especially social overhead capital; discontinuities in the savings function; and, most important, discontinuities in the investment function. Each of one thousand investment projects may properly be rejected by one thousand entrepreneurs in terms of their own marginal-cost-returns calculations; yet all thousand together may launch a substantial and sustained increase in national income. The relative marginal productivity of various projects may vary considerably according to the sequence in which they are carried out and the other projects with which they are combined.

Still another part of the explanation lies in what Myrdal calls "backwash" effects of development concentrated in one sector or region of the economy. Thus expansion of foreign trade may bring growth to the industrial sector while further retarding the rural sector.

Dr. Harberger recognizes these factors but does not take the logical next step. He does not insist that net investment of less than (say) 10 per cent of national income is unlikely to permit technological progress rapid enough to outrun population growth, bringing discernible changes in per capita income, and the changes in attitudes and behavior patterns needed for self-sustained growth. If we are concerned with the design of investment programs absorbing 10 to 15 per cent of national income, marginal returns to individual investment projects, taken by themselves, are unimportant. A calculus is still involved and the consumer is not dethroned as sovereign; but the question is not which project by itself will bring the biggest increase in output, relative to cost, during the next few years, but which pattern and sequence of projects during the next five years will bring the most rapid growth of national income during the crucial period, say, in the decade beginning ten years hence? This question breaks down into such hard-to-answer subquestions as: What investment program will have the maximum aggregate "linkage," backwards and forward (to use Albert Hirschman's happy term for the effects of one investment on investment in earlier and later stages of the production process)? What kinds of investment will create pressures of a kind that will assure the undertaking of further investment? Which will bring the most improvement in labor, managerial, and technical skills? Which will contribute most to technology-mindedness and development-mindedness? Which will do most to shift entrepreneurs from "zero-sum games" to "positive-sum games"? (Leibenstein's expression.)

When evaluated in terms of this kind of analytical framework, what appears at first sight as "showcase psychology" may turn out to be wisdom, and what looks like "caprice" may reflect sound intuition. Thus Hirschman has shown, on the basis of work done by Chenery and Watanabe, that iron and steel seems to have higher aggregate linkage effects than any other industry. Perhaps the universal wish among underdeveloped countries for iron and steel plants rests on a sound foundation.

I have a hunch that if Dr. Harberger and I were on the same advisory team we could agree on the advice to give a specific government at a particular time; but the analytical framework I consider appropriate for underdeveloped countries does not lead to general policy recommendations of the kind given in Harberger's paper. With regard to taxes, the real problem is how to collect more revenue without diluting incentives needed for development? In my view import policy should be discriminatory, according to the development plan; multiple exchange rates are one of the most effective devices for improving resource allocation—provided the system does not become too complicated. Producers with monopoly power should not be "continuously subjected to foreign competition." Something like Hirschman's "strategy" is preferable: let imports come in freely until the domestic market is wide enough to be attractive to domestic enterprise and then protect the

infant industry. And even if one could determine "marginal productivity of capital in the private economy" (is it the 100 per cent that lenders earn on credit to peasant farmers, or the 10 per cent that foreigners earn on mining and petroleum?), it should be shunned as a guide to the allocation of public investment funds.

ALEXANDRE KAFKA: Dr. Goode has written a concise and realistic paper. There is very little in it with which I do not wholeheartedly agree. My comments will, therefore, consist mostly of the pursuit of ramifications of the points it raises.

Let me start with two words about definitions. Dr. Goode, very properly, distinguishes increases in human capital from technological progress. But the latter is an increase in somebody's knowledge, and knowledge is part of human capital. Where should we draw the line? Knowledge has a scarcity distinct from that of human beings, except for that knowledge which literally everybody who is anybody (for the problem at hand) possesses. Only changes in the latter knowledge should be reflected—as technological progress—by changes in the position and shape of the production function; all others should be represented by movements along it. If, however, human capital is explicitly recognized as a factor of production, technological progress is apt to appear quite small, except as between millennia or widely different civilizations. In the last analysis, however, the distinction between technological progress and increases in human capital is somewhat arbitrary, just as that between the former and increases in physical capital.

I would also think that with the explicit recognition of human capital, labor should disappear as a separate category, just as land has become part of physical capital. Nor need we stop there. I am pleading, of course, not against the explicit recognition of human capital, but in favor of explicit recognition of the possibly very imperfect substitutability of human beings for each other, and their possibly very close substitutability for machines.

This consideration leads to the next point, which concerns the roles of different types of capital. If human and physical capital are admitted to be close substitutes over a very wide range (rather than complementary), we can explain in part the propensity of underdeveloped countries for large-scale ultramodern projects: since there, so much organization is, as it were, built into the machinery and can be imported along with it, to replace a lack of organizing ability which reflects deficient human capital. (Cf., also, A. O. Hirschman, *The Strategy of Economic Development*, pages 150 *et seq.*)

Investment in human capital will often yield its fruits later than investment in physical capital. As a consequence, the results of the former must be more heavily discounted than those of the latter, for uncertainty as well as for time; and they may actually accrue beyond the economic horizon of decision-makers. This horizon may be low in underdeveloped countries due to a short life expectancy—and here we have the makings of a vicious circle. It is by no means surprising, therefore, if these countries invest little in human capital, even if, undiscounted, such investment would be much more productive than the accumulation of physical capital.

Both preceding comments are merely a plea that we should not go overboard in our enthusiasm for human capital, not an attempt to deny its importance.

Is a large stock of social overhead capital required prior to enterprise capital? I have seen too much efficient social overhead capital provided on an *ad hoc* basis to agree with Dr. Goode. Though it is not the final word on the subject, it is not without interest to recall that in the last years of the nineteenth century the Bolivar Railroad in Venezuela suffered grievously from the competition of (donkey?) cart transport. (See *Inter-American Economic Affairs*, Spring, 1957, pages 34, *et seq.*)

How do we obtain resources for investment in either physical or human capital?

Dr. Goode stresses the importance of obtaining resources for investment out of saved increases in income rather than through changes in the allocation and, possibly, distribution of a given income. If so, then one need is to improve the use made of all available or potentially available resources. A few words may be said about some aspects of this problem, with which Dr. Goode, quite understandably, does not deal.

There is a modern tendency, which Dr. Goode wisely eschews, to extend the concept of idleness excessively and, mainly, to draw the wrong policy conclusions from its existence. Regarding the latter mistake, one may admit, as a report by one of the UN Regional Economic Commissions points out, the presence of disguised unemployment in some countries not only in agriculture, its accepted habitat, but also in the older branches of manufacturing. But then one cannot recommend general industrial protection whenever there is disguised unemployment in agriculture. Only new industries now appear to merit protection and only for a limited time—an old idea, which now acquires new support.

The time shape of the income stream is of great relevance to obtaining resources for investment. A gradual increase is less likely than a steep one to lead automatically to a rise in the propensity to save. The governments of present-day underdeveloped countries are under pressures which prevent their promoting delayed but eventually steep rises in income; the attempt to promote immediate and steep rises is apt to end in a delayed and gradual pattern of growth. This is one way in which the international demonstration effect may operate on governments, if it does not make them attempt merely to redistribute rather than increase income.

Dr. Goode is worried more, however, by the effects of demonstration on the simultaneous allocation rather than on the intertemporal distribution of income. The simultaneous demonstration effect—if it exists at all—cannot, however, operate effectively without forced redistribution of income, unless the incomes of the poor are rising as a "natural" consequence of development; for the rich cannot be assumed to be subject to the effect. They already know how to spend; while the poor cannot save out of traditional incomes. But the incomes of the poor cannot be assumed to rise "naturally" even if per capita GNP increases, as long as there is disguised unemployment. (One may think of increases in leisure in subsistence agriculture not reflected in a rise in the urban income differential; or, regarding plantation agriculture, of reductions

in the plots granted to laborers, since these are a function of family size.) The difficulties which many underdeveloped countries appear to have in raising their propensity to save out of rising per capita GNP may suggest that disguised unemployment is more limited than has sometimes been assumed.

The absence of disguised unemployment in some presently underdeveloped countries is partly due to their having undertaken their industrial revolution before their agricultural one. The Great Depression, which sparked the industrial revolution of so many of the underdeveloped countries, by a change in terms of trade, was not in fact a substitute for the underemployment-creating effects of technical progress in agriculture. It is, incidentally, interesting to note that what agricultural revolutions there were in underdeveloped countries were often used not so much to save labor as to save exchange from food imports for use in importing equipment and raw materials.

However that may be, Dr. Goode is rightly concerned about the marginal propensity to save. A branch of modern theory claims that planned investment calls forth the necessary saving through income redistribution. But in poor countries, there are narrow limits to this process, which presupposes some wealth, even if we are prepared to accept all the other implicit assumptions of the thesis.

Obtaining quantities of resources is not the only problem in adding to the stock of physical and human capital. The resources must be placed in the right hands and they must be of the type demanded. The former problem—the general transfer problem—and the latter—that of the right product-mix—can frustrate a high savings potential in various ways.

Regarding the general transfer problem, Dr. Goode rightly stresses the importance of stimulating potential small savers to become investors. But institutional improvements which accept but ease the separation of the two functions are a more urgent necessity perhaps than he appreciates. Expanded state activity has created many new transfer problems, though it has also solved—by development banks and similar institutes—numerous old ones. For some countries, moreover, the transfer problem created by the relative decline and change in character of private foreign investment has not been solved by the spectacular rise in international public aid and lending. Inflation also greatly aggravates the general transfer problem. Of the instruments developed to cope with it, public share issues by public enterprises, directly or through investment trusts, are gaining popularity in underdeveloped countries and represent perhaps less despairing answers than indexed bonds.

Regarding the problem of the product-mix, it is not easy for underdeveloped countries to produce human capital of certain kinds with their own resources. I do not think, however, that, apart from certain biases, it is quite as difficult as Dr. Goode suggests to import a large supply of the sergeants of industry rather than only small numbers of its captains. The former task has, historically, devolved upon immigration. Since the relationship between skilled and unskilled labor is apt to be one of complementarity rather than of competition, it is demand for imported equipment rather than for local labor which will suffer from the importation of new or intermediate skills—and this

will be true for overpopulated even more than for underpopulated countries.

Otherwise, the outstanding aspect of the product-mix problem for underdeveloped countries in the postwar period has been their contrived inability, through overvalued exchange rates, to produce, directly or indirectly, by import substitution or through exports the producer goods and raw materials which import substitution in the field of consumer goods requires. Some countries have not so much neglected this problem as they have gambled for its solution on continued favorable terms of trade. The gamble is now coming to an end for most of them.

Moreover, the advanced stage of what used to be known as economic nationalism is directed at keeping out competing factories rather than goods. That even more advanced stage of medievalism, cartels, is, in my opinion, relatively rare in the industrial sector of underdeveloped countries, where factories, though possibly incompetent, do compete with each other where market size permits the existence of several in any particular line. This type of economic nationalism receives apparent justification where, under cover of import restrictions, overvalued exchange rates are maintained, which imply a subsidy to the remittance of profits, or where new industries are established merely on the basis of superior publicity rather than productivity.

It is tempting to ask whether the present particularly pronounced expression of need for capital on the part of the underdeveloped countries has as its counterpart slower rates of growth than those which were enjoyed by the presently advanced nations when they themselves were backward. It appears that a number of still underdeveloped countries, particularly in Latin America, have recently, over extended periods, matched some of the fastest rates of growth of either total or average output observed over similar periods in presently industrialized countries. The clamor for more capital comes from the fastest growing countries and from less progressive ones, indiscriminately. Even that emanating from the former does not betray a smaller need than that of the latter nations; but it is heartening to note that for quite a number of underdeveloped countries at least, the relative gap with the advanced nations has been closing and for some others, at least, not widening.

George E. Britnell: I am inclined to agree with Professor Nicholls that in his opening criticism of anthropologists he does indeed "protest too much." For he goes on at once to postulate a "homogeneous population" as a factor favoring nationalism and the latter, in turn, as a factor favoring economic progress. All this sounds rather like social anthropology! But is it the lack of nationalism as such or is it the lack of a degree of homogeneity in culture which holds back development in Africa? One thinks of present problems in the former Condominium of the Sudan with its southern tribes extremely limited in their wants compared with the population of Khartoum and vicinity.

Then again I must confess, as a Canadian, to a modicum of sympathy with certain underdeveloped countries which may fear some of the effects of heavy dependence on foreign investment. Apart altogether from the economic

possibilities for the debtor country if the flow of investment funds should for any reason be halted abruptly, noneconomic considerations arise from the operations of foreign-controlled companies, branch plants, and subsidiaries. Thus even some Canadians are currently finding it difficult to distinguish between a new American economic imperialism and capital investment by a benign neighbor. Less sophisticated peoples may perhaps be excused if they fall prey to the fear that dependence upon external capital will be accompanied by conditions which will impede the fulfillment of their political aspirations. Indeed it would be rather surprising, in view of anticolonial trends in the world today, if a measure of such nationalistic sentiment did not assert itself in most underdeveloped countries whatever the form or through whatever channels foreign capital may flow into their economies. I suspect, therefore, it is not only the "business leaders" of economically advanced countries who may need to develop a philosophy of "economic statesmanship" in their foreign operations. Might not the prescription be usefully extended to the governments of the lending countries?

Professor Nicholls concedes that most underdeveloped countries may require a heavier dependence on public enterprise than has characterized the economic development of, say, the United States. Nevertheless, his chief concern is for the greater encouragement of private enterprise in such areas. But are not profitable private enterprises in underdeveloped countries, by the very nature of social institutions, frequently operated to provide monopoly revenues for private groups? In any event, does not the attack designed to remedy the situation require to go deeper than "a higher prestige level in the social hierarchy" for the entrepreneur and the businessman? And must we not recognize the different prospects for success in public enterprises in countries where an effective civil service of almost undoubted integrity exists as in, for example, India or the Sudan? May not policies and programs of economic development in such countries conceivably differ from those in countries where government jobs are, traditionally, a means by which privileged individuals become richer?

I find, however, even greater difficulty in accepting Professor Nicholls' stern admonition that "it is essential . . . that the scope of public participation be clearly defined, explicitly reserving all other fields to private enterprise." Can any government in the twentieth century, whether of a developed or an underdeveloped country, be expected thus to abrogate its sovereignty? Can such a government bind its successors in perpetuity? If not, then for how long? Surely all generalizations of this nature are basically dangerous, not only in terms of the political realities, but also of the great diversity of situations and the need for flexibility in policy. It may not be completely irrelevant to observe that the Canadian National Railways emerged as a great enterprise after several private railroads had failed. One wonders what the solution would have been if railroads in Canada had been "explicitly reserved for private enterprise." Would it have been necessary to sell them all to the CPR at fire-sale prices?

I suppose that just as we are all, at least in theory, against sin, we can all

agree with Professor Nicholls on the desirability of maintaining order and stability. When, however, this involves, as it so often does in underdeveloped countries, maintenance of a feudal *status quo* in agriculture, even the charms of this happy condition begin to fade. All change is disturbing and tiring, but I cannot see that this or the "uncertainties" which "men of wealth" may face in "forward commitments" can justify us in dismissing land reform "as a policy of last resort." And when it comes to the peasant-proprietor I wonder if producing "more from his few acres" is the only alternative to "forced-draft introduction of large-scale techniques" and enclosures? Is there no room for encouragement of voluntary co-operation? In some countries strengthening the "subsistence sector" of agriculture to increase food production—and thus improve the health and energy of the population—may be a first step to industrial development.

We can deplore with Professor Nicholls the highly centralized public administration and almost negligible local self-government of many underdeveloped countries without, perhaps, endorsing fully all his generalizations. I wonder, for instance, whether it is quite accurate—I might almost say quite fair—nearly two hundred years after the impeachment of Warren Hastings and following two centuries of British rule, to ascribe suspicions of government benevolence which, we are told, are harbored by the peasants of India today, to "centuries of experience during which government meant either a corrupt and ruthless tax collector or a marauding army which requisitioned scarce food and draft animals and conscripted the village youth." Surely, too, distrust of the central government may stop somewhat short of absolute political cynicism. Even "a spontaneous ripple of laughter" may be misleading. I remember very clearly the derision of this sort which almost invariably greeted the Canadian Prime Minister's picture in Ottawa theaters in the summer of 1943. Yet the Liberals won the next two general elections very handsomely and margins in the Ottawa seats were among the handsomest!

I wonder further to what degree lack of initiative at the local level may sometimes be imputed to disease, undernutrition, and the nature of local administration rather than to government centralization as such. Where the village council is made up of old men, strongly influenced by tradition, innovation is invariably difficult. The difficulties may be greater if the young men are local "upstarts" and less if they come from the central government!

We can applaud Professor Nicholls' quest for a greater regional balance in underdeveloped economies. But surely his comparison and contrast of United States and Brazilian settlement and development policies overlook the vast differences between an equatorial and a temperate area. Many North American ideas and institutions may not work in the tropics. Dr. Boeke was thinking of Indonesia when he reached what he described as "the obvious conclusion . . . that we shall do well not to try to transplant the tender, delicate plants of western theory to tropical soil where an early death awaits them." (*Economics and Economic Policy of Dual Societies*, page 143.) Without subscribing unreservedly to the somewhat pessimistic outlook of Professor Boeke,

we may concede that his warning has a certain validity for us. Political, social, and environmental factors are extremely complex.

Thus my concern deepens when Professor Nicholls concludes that "Western specialists in economic development—and even more their counterparts in the national planning agencies of the underdeveloped countries—must recognize the need for changing the sociopolitical environment." This sounds like a very tall order—a difficult, delicate, and dangerous job. Arnold Toynbee has suggested that future generations may regard the age in which we live as that in which society began to accept the welfare of the whole human race as a practical objective. Clearly the practicability of the objective must depend in large measure on some reconciliation of political ends and aims and of social values, customs, and prejudices with economic goals. Yet this hardly compels us to assume that private enterprise is the only possible starting point, the United States the only possible model, and welfare capitalism the only possible goal.

SPECIAL PROBLEMS FACING UNDERDEVELOPED COUNTRIES

TRANSPORTATION AND ECONOMIC DEVELOPMENT

By WILFRED OWEN
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Transport over much of the earth and for most of its people is still primitive. The shipment of agricultural products is often delayed for months because of bad weather, poor facilities, and inadequate capacity to meet seasonal peaks of demand. Many communities are isolated for long periods each year and suffer heavy economic and social burdens as a consequence. Areas of glut and famine may exist in close proximity because transport has failed to bridge the gap between producer and consumer. The prices of food and other products frequently reflect very heavy transport costs. Products that should be available domestically may be imported from foreign sources thousands of miles away because transport over much shorter distances is impossible.

The importance attached to doing something about this situation is reflected to an increasing degree in national planning efforts and in capital outlays for road building, railroad modernization, airports, airways, and airlines, ships, waterways, and ports, pipelines, and other transport investments. Similar emphasis is found in the technical assistance activities of the United Nations, in American and European economic aid programs, and in the operations of international lending agencies. One-third of all development assistance provided through the International Cooperation Administration has been devoted to transport, and nearly the same proportion of International Bank loans.

The magnitude of these activities and of the problems they seek to resolve emphasizes the need for sound policies to assure that transport makes its maximum contribution to economic growth. How much transport investment is desirable, what kinds of transport are best adapted to present and forseeable needs, and how to organize and pay for the transport system are questions that call for thoughtful analysis of transportation history, the factors underlying current transport trends, the possibilities of emerging technology, and the relations of transportation to the economy as a whole. We need to know how to build on what exists, what to salvage and what to scrap, what new facilities are needed, and which investments that seem practical today may prove to be economically untenable ten years from now. Several of these factors are discussed in general terms in the paper.

Relation of Transport to the Economy

There is a close relation between volumes of transport and levels of economic activity. In the United States, for example, over a considerable number of years every dollar of gross national product (in 1947 prices) has meant the movement of some four ton-miles of intercity freight. This close correlation results from the fact that most economic activities are possible only if transport is available to make them so. Comparisons of transport facilities and services among countries in different stages of economic development emphasize the relationship. For example, France has 136 kms. of improved roads for every 100 square km. of area, compared to 5 kms. of improved roads in Indonesia and 2 in Paraguay. There are nearly 4,000 motor vehicles for every 10,000 persons in the United States and only 9 for that many people in India. Railway ton-kms. of freight total more than 7,100 per capita in Canada compared to 71 in Iran. Rail passenger travel per capita in the Netherlands is seventeen times what it is in Colombia.

Despite these variations, a fairly uniform proportion of total investment is devoted to transport, regardless of economic conditions—attesting again to the relation between economic activity and the movement of people and goods. In a number of countries transport investment as a percentage of gross domestic investment is found to range between 20 and 30 per cent. Recently some attempts have been made to determine within fairly broad limits the amounts of transport capacity actually required to accommodate specific goals of national output or to prevent transport inadequacies from making the goals impossible. Countries with economic plans have generally allocated from 18 per cent to as much as 40 per cent of planned public investment to the transport sector. Some sample percentages are Afghanistan 40, Cambodia 34, India 29, Pakistan 18.

Unfortunately, transport investment experience to date provides no ready-made guide to an effective transport policy. The proportion of investment allocated to transport seems to have little relation to whether or not services are satisfactory. The reasons for this are varied. It is possible, and in fact quite easy, to spend substantial sums for transport without ever making much headway. Expenditures may be spread so thin that little value comes of them. Large investments may be nullified by poor design and failure to provide for maintenance. Inefficient methods of construction may eat into transport budgets without accomplishing material results, and investment may be used for the wrong types of transport or for the wrong kinds of improvements.

Lack of balance may also nullify a transport investment program. Railway dieselization requires complementary improvements elsewhere

if the effects of the new motive power are to be realized. There must be modern wagons with the necessary strength, heavier rails for the greater loads, and longer sidings for lengthier trains. The beneficial effects of new roads will be curtailed if import licenses restrict the availability of motor vehicles and replacement parts or if tax and regulatory policies limit the operation of trucks. Without a balanced investment program it will not be possible to make an effective contribution to transport capacity.

Rate policies, too, may reduce the effectiveness of transport investment. Nonremunerative passenger fares may induce such heavy demand that freight movement is impeded. The absence of promotional rates may discourage traffic. Finally, even where there is a high proportion of transport investment to total investment, this may simply reflect an absence of investment in other fields.

How Much Transport Investment?

How, then, should we go about deciding how much to invest in transport? One approach is to determine transport capacity requirements by estimating, commodity by commodity, the traffic that is likely to be generated by future production. Sources of raw materials and probable markets must be known, and the probable movement of goods then related to specific transport routes. A more manageable approach, however, is to limit such studies to a few principal products that account for most of the traffic. The rest can then be estimated on the basis of past trends and projections of population and income.

In India the Planning Commission estimates transport requirements on the basis of projections for four major traffic items: coal, cement, food grains, and iron and steel. During the First Five Year Plan the share of total investment allocated to these purposes was raised to 28.9 per cent, and many of the difficulties of earlier years were ironed out.

The India Planning Commission, in preparing for the Third Five Year Plan, is establishing certain hypothetical goals for industry; then testing their practicability from a transportation standpoint by estimating their effect on transport requirements. Downward adjustments can then be made in the industrial program if this is necessary to assure transport capacity to match the demands. This give-and-take adjustment of transport investments and other planning goals emphasizes the close relationship between the two and the importance of avoiding an imbalance that means operating industrial establishments at partial capacity due to lack of transport.

Decisions concerning the total amount of transport investment that is justified must reflect an awareness of these relationships to economic

activity. The transportation of fish provides an example. If fish can be brought to market quickly, buyers will be found. If not, the catch will be spoiled or it will not take place at all. The cost of supplying transport may be high, but the cost to the economy of leaving this resource unutilized may be higher. Likewise if hauling produce from farm to consuming center takes an excessive length of time, considerable loss will be sustained and the production of cash crops will be curtailed. Investment in more adequate transport can put agricultural resources to work, benefiting producers and helping to feed industrial employees.

Again, if a barrage area cannot be colonized because transport facilities are lacking, these facilities will have to be built to make possible the benefits of the irrigation scheme. This decision is simply a reflection of the complementarity of transport and other economic activity. Investment in transport must be adequate to make other development possible.

To a large extent, then, transport investment decisions will follow from demands imposed by development elsewhere. However, transport's role is not simply the passive one of accommodating traffic generated by activities already planned or under way. Transport also plays the active role of making new resources available—of taking the initiative in economic growth. This fact is sometimes lost sight of because so large a proportion of available capital must be spent for replacements and for additional capacity to meet demands that already exist. In most underdeveloped countries there is little left over for transport investment aimed primarily at promoting new economic activities. This suggests that in some countries a transport program of much greater magnitude is needed. For by expanding the margin of residual funds available for transport projects aimed at exploiting new resources, the impact of transport investment might be very much greater.

What Kind of Transport?

In underdeveloped countries the problem of selecting the type of transport for which expenditure will be made is twofold. One problem is to reach a decision for a given route: whether to provide rail, road, water, or some other type of service. The answer will depend on what is to move, in what quantities, for what distances, over what terrain, and at what cost in domestic resources and foreign exchange.

Selection of alternative transport methods must also take into account the transport media already in existence. In many cases sunk costs may prove decisive in programming improvements. At the same time it will be necessary to judge the course of changing transport technology and to avoid, insofar as possible, investments that will result in heavy obsolescence.

Most of the proposed transport investments in underdeveloped areas today, however, do not pose intricate questions of the relative desirability of alternative transport methods for specific routes. The desirability of air, water, rail, or road investment is generally fairly clear on the basis of what is to move and what the cost and type of service by alternate methods will be. In many cases two or more parallel services will be warranted despite concern expressed over competition, because growing countries need all the transport capacity they can get.

The question of extending rail routes in most instances does not arise in underdeveloped areas. Traffic may be too light to warrant the investment, or the fact that roads will be necessary in any event for local traffic means that longer distance movements can also be met with the same facilities. Railway investments generally involve improvments to marshaling yards, terminals, signal systems, and sidings to keep up with demand, and they do not raise the question of alternatives. The task of furnishing new means of access to large areas of the country that have no transport, on the other hand, is largely a problem of motor transport.

The second problem in allocating funds among transport media arises when there is no question of alternative methods to serve a given route, but rather the question of how much should be allocated in total to the various methods of transport. Here the answer will again depend in part on what has to be spent to maintain facilities already in operation and for which there is a need. Otherwise the allocation of funds must be determined on the basis of which transport investments will mean the greatest contribution to national product for a given expenditure of scarce resources. And the answer will be found in the economic activities served by the transport facilities contemplated.

Influencing Transport Demand

An increase in the supply of transport facilities is obviously the most urgent transport problem to be coped with in newly developing countries. But the possibilities of influencing the demand for transport is a very significant and neglected aspect of the problem.

In underdeveloped countries the demand for transport is highly seasonal, primarily because of the predominance of perishable agricultural shipments. It therefore becomes important to reduce unnecessary peaks of demand on available transport capacity wherever possible. To accomplish this, investment outside the transport field can often be more effective in stretching the capacity of transport systems than an increase in the supply of facilities.

To illustrate, food grains imported into Pakistan average a million and a quarter tons per year. When grain shipments arrive at Karachi there is a sudden call for empty railway wagons to be moved to the port to meet the demands of this top priority shipment. Transport on the North Western Railway is thus disrupted and other demands for transport capacity go unfilled. The most direct solution lies not in buying more railway wagons but rather in providing a place to store grain, which can then be moved whenever rail capacity is available.

Refrigeration and speeding up delivery of perishables in many undeveloped countries cannot be looked for until a much higher rate of capital investment is feasible. A prompt and effective alternative is the establishment of plants close to sources of supply, where food can be dried, salted, frozen, canned, or otherwise processed. Excessive transport demand can also be avoided in the future by the selection of industrial locations that minimize transport requirements.

Rates can also exert an important influence on demand. Where railway rates come under the purview of government they are sometimes unduly promotional or they fail to promote the right kind of traffic in the right places. Railroads need much greater autonomy in the pricing of their services to permit them to influence demand in a way that will assure effective operations and adequate revenues.

An interesting illustration of how transport problems might be attacked on the demand side is found in the National Planning Association's analysis of India's energy requirements. India's railroads are heavily burdened with coal movements, and some 2 billion dollars in railway investment will be required to meet the anticipated growth in the volume of coal transport. One-third of the movement of coal from the northern coal fields is for use by the railroads themselves; so that electrifying the railway or converting to diesel power would greatly reduce the volume of coal to be transported. More important is the feasibility of developing nuclear power plants, even at present high costs. For this might mean substantial savings over the next decade in reduced car requirements, the avoidance of early absolescence of rail facilities, and the reduction of railway congestion.

Other Aspects of the Transport Problem

Along with questions of transport supply and demand, a variety of other problems must be tackled that fall under the general heading of getting the job done. How are transport facilities to be financed? What organizational arrangements are needed to initiate, carry out, and successfully operate and maintain transport facilities? What technical assistance is needed and how is it to be obtained?

Great difficulties are encountered in underdeveloped areas, from getting the orginal idea of what should be done to keeping the finished product maintained and in use. To develop a transport system there is need first of all for both private and government agencies with appropriate responsibility, power, and staff to carry out an effective program. This means policy making and planning as well as reasonably efficient operations and useful research. A further need is for long-range programming that will avoid stretching available resources so thin that a complete and usable transport facility never emerges.

A problem common to all forms of transport is the general belief that in an economy with a plentiful labor supply, labor-intensive methods are always preferable to machine methods. The desire to put as many men as possible to work on transport is understandable. However, this may mean that others are denied jobs in industry, agriculture, or mining that would be created if adequate transportation were made available quickly. With labor-intensive methods, neither the quality nor the quantity of transport facilities can keep pace with the needed rate of economic growth. The selective use of laborsaving machine methods where these will speed the work and improve its quality would seem preferable to retarding the completion of work that is essential to exploiting productive resources.

Finally, there are difficult problems of management and finance that stand in the way of supplying transport facilities. Management skills may be too limited to make effective rail operations possible, and the organization of railway facilities in the national government may be such as to hamper a business-like approach to rail problems. The adequate organization and political complexion of public roadbuilding agencies, and the limited financial methods available to them, often defeat the road program from the start. Disorganization of motor transport operations and the shaky financial footing of overextended airlines are other common problems.

This leads to the observation that technical assistance, broadly interpreted, is essential to satisfactory transport in underdeveloped areas. But technical assistance in railroad building, aircraft maintenance, barge operations, and other engineering aspects of the transport business is not enough. There is also a pressing need for assistance in economics, public administration, planning, business management, and finance. Results will be achieved only through the efforts of a combination of skills. The necessary teamwork requires the best thinking and co-operative efforts of persons from economically advanced countries who will participate in the actual work abroad and in the training of visitors.

Conclusions

The importance of better guides to the solution of transport problems in underdeveloped areas stems from the fact that the success of other economic developments depends on how effectively the transport system functions.

The evidence in underdeveloped areas points to the fact that transport inadequacies are a major factor retarding economic growth. Even some of the deeply rooted social causes of underdevelopment can be ascribed in part to the isolation that results from inaccessibility.

The fact remains that the provision of good transportation is not *capable by itself of promoting economic growth. It is only where there* are resources to be developed and people capable of developing them that transport becomes the catalyst that transforms land and other resources into the things that people need. But even though transport alone will not achieve development, it can also be said that development will not be achieved without transportation.

This being the case, it is important to know what proportion of available investment funds needs to be allocated to transportation in order to make possible the size and character of the development program contemplated. Or, conversely, it is necessary to know what adjustments in the development program need to be made to fit the realities of available transport capacity.

Priorities for transport projects will have to be judged in terms of the contributions to economic progress that can be anticipated from the economic activities that transport will serve. A fair geographic distribution of investment has to be sought to benefit the largest number of people; but work that is spread too thin will benefit no one.

The role of transport in accommodating demand elsewhere should not divert attention from the fact that transport also plays the promotional role of making available resources that now lie idle because they are inaccessible. Capital is needed in excess of amounts earmarked for replacement and improvement of existing facilities in order to exploit to a greater extent this promotional characteristic of transport. A transport program so designed may be one of the most important keys to economic growth.

Decisions as to what type or types of transport would best serve on specific routes are not difficult on purely economic grounds. Cost and service data for the traffic and geography on a given route pose no insurmountable problems. The principal tasks are to anticipate relevent technological changes and to avoid the tendency toward protecting obsolescence.

Finally, amounts and types of investment are only one side of the

transport problem. Transport is subject to most of the same complexities that are common to all other programs in newly developing areas. Often the weakest links in the transport system are weaknesses of organization and management, as well as attitudes and education. Guidance from economically more advanced nations will have to be stepped up if countries woefully lacking in the necessities of life are to realize the great potentials that modern transport offers them.

MIGRANT LABOR IN AFRICA: AN ECONOMIST'S APPROACH*

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If there is one feature of the African labor scene which is universally recognized, it is that wages, particularly for unskilled work, are very low indeed when compared with the wages for similar work in more developed regions. In few tropical African territories do unskilled workers receive so much as $15 per month, and even on the most optimistic assumptions about the cost of living, wages of that order cannot conceivably afford their recipients much of a livelihood.

Explanations of the low level of wages usually attach importance to the imperfect specialization in Africa between wage labor on the one hand and farming on the other, which inhibits efficiency and thus causes labor productivity to be low, and it may be therefore worth while to examine in some detail, and from the vantage point of our own discipline, the nature of this imperfect specialization between wage labor and farming.

It is in most parts of Africa the common practice to seek only temporary employment in mines or towns or on plantations and sooner or later to return to homes on peasant farms in the countryside. This is in contrast with European and North American experience. It is true that there have been times and places in Europe and North America when farmers have taken up temporary employment away from home, but in general this has never been a significant feature in the structures of our economies, except perhaps for the supply of seasonal labor, whilst in Africa and other underdeveloped regions it has become a dominant and truly distinguishing feature. In most tropical African territories there are now a few permanent wage earners but their number is still generally very small.[1]

It is, of course, difficult to discern the degree of permanence of a labor force, particularly when this labor force is, itself, expanding rapidly. No two territories collect figures on a comparable basis and it is hard to devise a satisfactory measure of permanence or stability in

* I wish to thank my colleagues Professor David Walker, Dr. V. G. Pons, and Dr. C. Ehrlich for their critical comments on my first draft, and I thank my wife for helping me to say what it is that I really mean.

[1] Tropical Africa here excludes the Union of South Africa where it has been estimated that there were in 1951 some 1½ millions who had in some sense become permanent town-dwellers. See Summary of the "Tomlinson Commission" Report U.C. 61/1955 (Government Printer, Pretoria, 1955), p. 28.

wage employment. One cannot hope to obtain a satisfactory answer to direct questions about people's future plans so that the degree of permanence can only be assessed on the basis of past behavior, for instance, by asking people what period of their total working life they have spent in employment. In this way a recent survey of unskilled workers in Kampala, Uganda, revealed that those who had lived in town continuously for five years or more accounted for less than 20 per cent of the whole, and the Carpenter Report, which is probably the most thorough inquiry into these problems in Africa, states that in Nairobi, Kenya, only 11 per cent of African employees had completed five years' service with their current employer (although this is not of course the same as continuous residence). Such figures as are available all confirm the more or less transitory character of large sections of the labor force.[2] Even in the Copperbelt of Northern Rhodesia where specialization has perhaps gone further than in other parts of British Africa, it is reported by a competent observer that African labor is still principally migratory.[3]

This difficulty of documenting the extent of impermanence is not at all a matter of chance. It springs, I believe, from the fact that both economists and governments tend to regard short-term migration as essentially a transitional thing—simply as one of the many strains and stresses to be endured by a young industrial economy developing painfully out of primitive conditions. It is perhaps to be hoped that it will indeed be transitory; but before settling to the main task of this paper, which is to examine the causes likely to make for its persistence, let me record my view that observers of the African scene have tended to understress this particular problem in favor of others resembling more closely the problems with which Europe and America had to deal in early industrial revolution times. Much attention has been given, for instance, to the questions of creating a large enough labor force and also to the growth of attitudes and aptitudes which will enable African workers to participate satisfactorily in industrial life. These are old and familiar problems in a new setting: how old and familiar, may be illustrated by recalling that Andrew Ure, writing in the early nineteenth century, stressed the need to train human beings "to renounce their desultory habits of work and to identify themselves with the unvarying regularity of the complex automaton"; and he attributed Arkwright's success less to his knowledge of machines than to his skill in devising and administering a successful code of factory discipline. Indeed, so he

[2] *Patterns of Income and Expenditure of Unskilled Labourers in Kampala*, East African Statistical Department, Nairobi, 1957, and *Report of the Committee on African Wages* ("Carpenter Report") (Government Printer, Nairobi, 1954).

[3] J. Clyde Mitchell, "Africans in Industrial Towns in Northern Rhodesia" in *Report of the Duke of Edinburgh's Study Conference*, Vol. II (Oxford Univ. Press, 1957), p. 3.

wrote, "it required a man of Napoleonic nerve and ambition to subdue the refractory tempers of work people accustomed to irregular paroxysms of diligence" and to "animate the otherwise torpid talents of factory operatives little versant in the great operations of political economy, currency and trade, and actuated too often by an invidious feeling towards the capitalist." Nowadays we speak, I believe, of appropriate goal orientations and no one quite knows what we really mean whilst Ure's "Highlanders of lazy listless habits" conjures up an extremely lively picture.[4]

Again, much of the energy of labor economists from the older industrialized countries has been devoted to the study of labor movements, of trade-unions and other institutions affecting the determination of wages and the supply both of labor as a whole and of particular grades of labor. Such studies are both important and relevant in Africa, provided—and it is an important proviso—that it is realized that these apparently familiar institutions are part of a basically different economic setting. There is some danger of institutional studies being done without due cognizance of two things: first, that the economic setting displays certain genuinely novel characteristics, of which short-term migration is one, and, second (which follows from this), that institutions growing up within the labor force, such as trade-unions, may really be extremely different in function and character from the institutions which bear the same name in other economies. In other words, our economic training in countries where a specialized labor force seems, as it were, to be part of the order of nature is an advantage only if we are prepared to give due weight to those factors in the African situation which are not only new to us but which are also the dominating and basic facts about that situation. Temporary labor migration, which I would call the dominating problem in the African industrial scene, derives directly from this particular setup which is not found in the experience of Europe or America.

Industrialists and governments are rightly concerned to devise policies which will bring about a more perfect specialization between farming and wage earning. They consider the present lack of specialization is wasteful in several ways. In the first place, where movement between the two sectors involves, as it often does, long-distance migration, manpower is wasted in long and arduous journeys. Second, it is a waste to give much training to men who regard employment as merely temporary and so the labor force remains perpetually unskilled. Third, it retards progress in farming by removing from the farms at any one time a varying proportion of young adult men.

[4] Andrew Ure, *Philosophy of Manufactures* (London, 1835), pp. 15, 279, 327.

Why does temporary labor migration persist? In Europe the growth of towns was associated with the growth of a new category of people: the urban industrial working class. In Africa, too, the towns are growing rapidly, but, although some of their houses may be built to last a lifetime, those who live in them seldom stay for long. Sooner or later they return to their original homes. The explanations of this state of affairs which have been advanced fall broadly into two groups. The first, which may be amply documented from many sources, attributes men's unwillingness to sever permanently their ties with the countryside to an innate taste for an easy life. It is said—curiously—that Africa is blessed with a bountiful nature and that since a minimum of effort affords an ample sustenance there is no inducement to work hard and continuously. Given this view, the explanation of temporary migration in search of work then becomes simple: men work only long enough to acquire the cash needed to buy those things which only cash can buy, and when they have earned enough they leave employment and return to subsistence farms. Those who advance this explanation often refer to men as target workers, and the idea of the target worker has been widely canvassed.

There is by now too much evidence of the positive desire of Africans in most parts to enjoy a higher standard of life, but though one would therefore have to reject the idea of rigidly limited wants, it is not necessary to dismiss the whole concept of the target worker. If we define targets not in terms of particular objects like bicycles or particular sums of money but more generally as means to attaining a permanently higher standard of life, the concept is still useful and can indeed serve to throw light on the reasons why people engage in employment only temporarily. Their purpose, or target, in seeking employment is not to enjoy an immediate increase in their standard of life but rather to save as much money as possible in a more or less given time with which to increase the productivity of their farms. They seek the fruits of their work in town, not in the form of an immediate increase in consumption, but rather in the higher yield of better equipped farms. They save to be able to buy a waterproof roof for their houses and storage sheds, to acquire large solid bicycles on which to carry their crops to market, or to be able to pay the bride price for wives whom they will expect to do the major part of the work in the fields. Observers of temporary town workers notice that, low though their wages are, they appear not to use them all for day-to-day living and they conclude that their wants must be very restricted, whereas money is in reality saved in order to satisfy a broader range of wants at a later time. We may, therefore, accept a modified concept of the target worker while reject-

ing the general hypothesis that African workers lack "wants." The target aimed at may not be at all clearly defined in terms of either goods or money but ought to be thought of more in terms of a limit to the time available. Given the fact that people look upon employment only as a means to higher incomes later, when they return to the countryside, they will not stay in employment indefinitely even if they find that they have saved less than they had hoped. Changes in wages which increase or diminish the amount that can be saved in a given time do not therefore greatly affect the length of time that migrant workers will spend in employment. This fact, of major importance in the framing of management policies, often gets less than its due weight.

A second explanation for the persistence of temporary labor migration would be the view that labor migration is simply an initiation rite. Schapera and other anthropologists have found in the societies which they have studied that young men are not regarded as eligible to marry until they have spent a period of time away from home. Men, therefore, simply enter employment as aspiring doctors might enter a medical school, and they naturally leave again just as soon as they have served their time. The views of anthropologists command respect. Too few economists have followed the spirit of Professor Tawney's injunction to acquire a "stout pair of boots" (and go see for themselves), and this places them at a disadvantage vis-à-vis anthropologists, who for months or years are prepared to live the life and learn the language of villagers in remote rural areas. But research at that depth may lead to too great a respect for the statements of informants in the tribe. Anthropologists have means of checking the internal consistency of data gathered on family structure, social custom, and religious belief. They are apt to be just a little less critical when it comes to economic matters. The idea that a spell of employment in town is part of the process of initiation, or the "done thing," may be largely a rationalization of simple economic motives. Certainly it is most unlikely to be the whole story, and I would argue that it never can be the most important part of the story. To accept the proposition that labor migration is mainly a cultural requirement would be to deny that changed economic circumstances could directly alter it and thus one would have to regard as pure coincidence the fact that in Uganda, for instance, the practice of seeking temporary employment is most deeply rooted in those areas where young men have least alternative opportunities of earning an equivalent income in other ways, and that in some areas where the practice was at one time almost universal, the coming of alternative opportunities has caused it to melt away like snow.

This brings us to a third view, which sees the persistence of tempo-

rary labor migration as a consequence of low wages and unpleasant conditions of life in town and other centers of employment. It is probably this view which is most widely held today and therefore warrants the closest examination. Its exponents maintain that the conditions and wages in the towns are not sufficiently attractive to persuade immigrants to stay for longer than a year or two at the most; and that wages are based on the needs of bachelors and that the lack of houses capable of accommodating families, and the absence of protection against sickness, unemployment, or old age obstruct an assumed natural tendency to come to work and live in the towns. Bad conditions and insecurity explain why only the young will come to town and why men are reluctant to bring their wives or families.[5] Since labor migration is correctly regarded as wasteful, the remedy has seemed to lie in making urban life more attractive, by policy measures designed to raise wages, by providing suitable houses at reasonable rents, and by instituting schemes of social insurance. We need not be concerned here with the cost of these measures or the propriety of paying for the amenities of workers in the towns (who are often less heavily taxed than peasants) with money collected from peasants in the countryside whose income may be smaller. If short-term labor migration is indeed wasteful and if improvements in the town will overcome it, they may soon pay for themselves in the form of higher productivity. Nor need we question the assertion that in most African towns wages are low or that life is unpleasant. These things are unfortunately beyond dispute, although there are variations from place to place and few tropical African towns exhibit the grinding poverty and demoralizing apathy with which visitors to Calcutta and other Asian towns have become familiar. If people are to live in towns or even to spend only a short time in them, there rests a responsibility on the authorities to see to it that conditions there are tolerable and that people get enough to eat. But here I am concerned not with the desirability of improving wages and conditions, which seems to me axiomatic, but with the question of what effect improvements are likely to have on the practice of temporary migration. The question is not trivial, for a great deal of social policy in Africa takes it for granted that improvements will automatically bring about the desired end of greater specialization. Thus the Carpenter Committee in Kenya, which undertook a very thorough investigation of these matters, concluded that "the immediate basic conditions for stabilising labour are seen to be—the payment of a wage sufficient to provide for the essential needs of the worker and his family; regular employment; a house in which the worker and his family can live; and security for

[5] Cf. L. P. Mair, *Studies in Applied Anthropology* (London, 1957), p. 78.

the worker's old age."[6] This led them to recommend large increases in wages, better provision of houses, and schemes for the provision of security against the normal hazards of industrial life, and thereby make it possible for men to sever their connections with the countryside and "get away from the enervating and retarding influences of [their] economic and cultural background" (page 138) and to live with their families in town. This view is widely echoed in other parts of tropical Africa.

There is unfortunately reason to doubt whether these policies by themselves will be effective. Whilst in the collieries at Enugu in Eastern Nigeria and in the copper mines of the Belgian Congo they appear to have met with some success, it is reported from French West Africa that improved housing has in no way affected temporary migration, and in general the evidence is conflicting.[7] It is conflicting because certain vital factors tend to be forgotten by an approach which sees stabilization as mainly a problem of what happens to people while they are in employment and which regards stability as simply a function of the income from employment. The migrant worker, unlike anyone who studies him only during his brief masquerade as an urban proletarian, views his own life as a whole and is well aware that his income consists not solely, or even necessarily mainly, of wages and other benefits of employment, but also of the income which his family draws from farming in the countryside. This farm income may be only a subsistence income, from crops that are grown for consumption on the farm, but often a surplus is grown either of these subsistence crops or of others that are grown especially for sale and in that case the farm income may consist in part of cash. Whatever form it takes, this farm income is a part of the family income no less than the wages earned in employment. The size of this farm income varies greatly from place to place. Where land is plentiful, as it still is in many parts of Africa, and where there are opportunities for the sale of crops, the farm income may well exceed the bare demands of subsistence. In other parts, land is now scarce and high population densities may prevail; here the income from farming may hardly suffice to support a family at all. Yet even here people cling to their farms tenaciously, because if they did not they would forgo part of their income.

This tenacity with which people cling to their land is partly to be explained by feelings and emotions which go beyond the realm of economics; but partly it arises out of forms of land tenure, which, how-

[6] *Report of the Committee on African Wages, loc. cit.*, p. 139.

[7] Inter African Labour Institute. *The Human Factors of Productivity in Africa—A Preliminary Survey* (CCTA, 1956), Chap. 8, and V. Thompson and R. Adloff, *French West Africa* (Allen & Unwin, 1958), p. 494.

ever diverse in many ways, have this in common, that they restrict the opportunities for obtaining, and parting with, land. Terms like ownership and tenancy must be used carefully when we consider systems of land tenure other than our own, but it is quite certain that hardly anywhere in Africa can a man obtain real compensation for vacating a farm. Either he has no individual claim to his land or, if he does, there is no market for his farm since land of equal value still lies untilled. Even in Buganda, which has the most "Western-like" system of land tenure, a tenant can claim no compensation for improvements, and although an incoming tenant pays a premium, this goes to the landlord or his agent, not to the outgoing tenant. In Kikuyu country, where land is scarce, farmers do sell their farms even though such sale has no legal sanction; but partly for that reason and partly because Kikuyu are poor and cannot borrow, farm prices bear little relation to their value as measured by the income which they might be expected to yield over a period of years.

The terms on which land is held are more commonly discussed in relation to agricultural policy but they are highly relevant to the persistence of labor migration. If the future income of a farm, however small, cannot be capitalized, the farm must exercise a strong pull. So long as a man cannot obtain compensation for vacating his land and, on the other hand, cannot normally maintain his right to it unless he or his family are in actual occupation, he has no inducement to vacate it and he is therefore bound to regard employment as in some sense temporary. It is sometimes argued that the compensation for abandoning the land comes in the form of higher wages which a long period in employment is bound to bring him, that low wages are the consequence of low productivity, and that low productivity is caused by the fact that men have not committed themselves to employment. Such reasoning is naïve. An individual's wage is not determined in such simple ways, and Africans who work for wages are less easily deluded by such comfortable moral theories than their employers or their governments. It is one of those hypotheses which are true in general and in the long run; it is not a consideration which could influence very potently an individual about to make a choice. At present, if a man were to withdraw permanently from the countryside, he would be giving up both a part of his income and also a form of insurance against unemployment or ill-health. If there were provisions against these risks, such as those envisaged by the Carpenter Report, the value to a man of his farm would be correspondingly diminished, but the farm would still yield him an income, and this is so irrespective of whether the wage he earns in town is high or low and whether or not family houses are available in town.

Unless a permanent withdrawal from the countryside is actually made a condition of employment in the town, workers will tend to hold on to their farms. In the Belgian Congo withdrawal from the countryside is now in a sense made a condition of certain kinds of employment. To quote Hailey's *African Survey*, "recruiting conditions now insist upon the laborer being accompanied if possible by his wife and family."[8] Once an entire family leave their holding in the countryside it ceases to be theirs and it ceases to afford them further income or security. The success of stabilization policies in the Belgian Congo may therefore be attributable as much to this compulsory severance from the land as to the positive inducement of employers. It is also possible that, although a farm may yield an income, residence in the countryside is sufficiently unpalatable, perhaps because of the power exercised by the authorities, for income to be sacrificed in exchange for the relative freedom enjoyed in the towns. This, too, is said to operate more strongly in the Belgian Congo than elsewhere in tropical Africa.

There are other reasons why a loss of income may be countenanced. We have dismissed as *simpliste* the notion that a man's wage must inevitably rise if only he will commit himself to urban life. This does not, however, preclude the possibility that a man who has already happened to attain a high wage may not then decide that a relatively small sacrifice of income is worth the pleasure of living a normal family life in town and it is then that it becomes important that this ambition should not be thwarted because suitable housing is not to be obtained. But in practice, such a sequence of events still appears to be rare, and, as in preindustrial England, the successful town-dweller's first impulse seems generally to be to augment rather than diminish his assets in the countryside. Moreover, leaving a family at home or on the farm is, in Africa, not incompatible with conjugal life in town and many of the ties which those who can afford it form with women in town have about them a semblance of stability.

Parallels are sometimes drawn between nineteenth-century English history and recent developments in Africa. In regard to migration, it may be as instructive, by way of summary, to point to some contrasts. The English towns of the nineteenth century drew their populations not from small peasant farmers but very largely from agricultural laborers who owned no land and were already entirely dependent on wages before they entered the urban industrial labor force.[9] They stayed in the towns, not because they found the conditions there attractive, but be-

[8] Lord Hailey, *An African Survey, Revised 1956* (London, 1957), p. 1392.

[9] A. Redford, *Labour Migration 1800-1850, passim*. The Irish immigrants and some of the Scottish Highlanders were an exception, but the farms they left had become so small as to be worthless.

cause, unpleasant though town life may have been, it was preferred to the life of an agricultural laborer. People stayed put in the towns, not because they afforded them adequate wages and security, but because, in the words of the East Africa Royal Commission, this was "their most economic choice." In most parts of tropical Africa it clearly is not.

I have attempted in this paper to relate the question of short-term labor migration to the very simple and fundamental economic proposition that a man—whether he be an African man or some other sort of man—would sooner have a higher income than a lower one. This fact, which leads us at once to consider the agricultural as well as the industrial structure, should never be lost sight of, for other factors, important as they may be, are secondary to it. I hope it has also been apparent that in a paper of this kind it has not been possible to do more than skim the surface of a very tough, complicated, and so far intractable problem.

DISCUSSION

D. Philip Locklin: The importance of transportation in the economic development of undeveloped and underdeveloped areas has been vividly portrayed in Dr. Owen's paper.

On the question of "How Much Transport Investment," Dr. Owen holds, if I interpret his paper correctly, that there is no universally "correct" proportion of available investment funds that should go into transport. With this position I strongly agree. The absolute and relative amounts of current investment funds that should go into transport facilities depend not only upon the nature of the economy but also on the nature, extent, character, and condition of past investment in transport facilities, on the extent to which new facilities will remove obstacles to further economic development, and, in general, on the urgency of transport requirements in comparison with other uses of investment funds.

In considering the kind of transport system to be developed for an area, Dr. Owen has ably set forth the many factors that must be considered. He recognizes that the transport media already in existence must be taken into consideration. In other words, the problem is quite different in an area not previously provided with some form of modern transport and an area in which railways or water transport or both had been previously developed to some degree. It must also be recognized that the different forms of transport are not complete substitutes one for another. Each has its peculiar advantages and limitations. Air transport, for instance, requires the least investment but gives the highest ton-mile operating costs; railroads require the largest capital investment and, except for water transport, usually produce the lowest ton-mile operating cost; highway transport appears to stand between air and rail transport as far as capital requirements and ton-mile operating costs are concerned.

One or two observations about transport policy in underdeveloped areas which are not mentioned by Dr. Owen may be of interest. It can be taken for granted that the development of a transportation system in such areas will be largely a government function. Not only will roads, airports, air navigation facilities, and waterway improvements be provided by government, as in this country, but the railroads will be government-owned, the major airlines will also be owned by the government, and perhaps some highway and water transport services will be provided by the government. So far as government ownership of the railroads is concerned, scarcity of private capital and the high degree of uncertainty as to whether the railroads can be operated profitably make ownership by the government a necessity.

With the railroads in these areas owned by the government, it is certain, and undoubtedly desirable, that they be used as an instrument of national economic policy. This means among other things, that, although an effort will be made to operate them without incurring a deficit, this result will not always, nor even generally, be attained. Certainly when their operation on a

self-supporting basis conflicts with the aim of economic development, the former will give way. Operating deficits, of course, will constitute a burden upon taxpayers.

The situation above described may lead to another feature of transport policy that is likely to be found in the underdeveloped areas. If a railroad system already exists in the underdeveloped area or if it is deemed necessary to build one, it is likely that restrictions will be imposed on road transport where it comes into competition with the government-owned railroad. This will be done in an effort to give the railroad as much traffic as possible and to keep unit costs and railway deficits down. Forcible diversion of traffic to the railway will be defended on the grounds that the direct cost of handling the traffic by railway is less than the direct cost of handling it by highway and hence that this policy makes the most economical use of resources. In some areas this policy will extend to restriction of for-hire services only; in others it will extend to restriction of the private carrier, or "ancillary" carrier, to borrow a term widely used in Australia. That is, individuals and firms will be restricted in the use that they may make of the roads in transporting their own products and raw materials in their own vehicles. This practice is characteristic of transport policy in New Zealand and also in five of the six Australian states. In countries characterized by low motor-vehicle ownership and poor roads, the problem of protecting the railroad from diversion of traffic has not yet become acute but may eventually become so.

There is a further aspect of the policy of restricting private transport to protect the railways that is of interest to the economist. It not only diverts traffic from highway to railway, but it often forces the shipper to pay rates which exceed the cost of moving his own goods in his own vehicles. Where there is freedom to use the highway for transporting one's own goods, the cost of transportation by motor vehicle tends to limit the charges that the railway can exact. Thus the normal effect of the development of motor-vehicle transport is to destroy the upper reaches of the traditional discriminating railroad rate structure based on demand factors, while permitting the railway to continue a discriminatory pattern of rates below the level of motor-vehicle transport costs. Restriction of private trucking makes the cost of transportation by motor vehicle ineffective as a ceiling to railway rates and thus prevents the modification of the traditional railway rate structure which the development of the motor vehicle would normally bring about.

One other feature of transport policy that is likely to characterize an underdeveloped area struggling toward fuller development is the granting of preferential freight rates to commodities important in the economy of the area, particularly products that are exported and which must compete in the markets of the world. Preferential rates of this sort are more commonly found where the railroads are owned by the government, but they are sometimes imposed on privately-owned railroads. An old and familiar illustration of this policy may be found in the Crow's Nest Pass rates on grain and flour in Canada, which go back to 1897, and have been deemed important to the development of western Canada. Preferential treatment of agricultural products is alleged to be characteristic of the rate structure in Australia. It should

not be inferred, however, that low rates on agricultural or other products of a region are proof of preferential treatment. If rates are low because conditions of demand require it but are designed to maximize the contribution which the traffic in question will make to fixed costs, they cannot be said to be preferential. It is only when they are held at even lower levels out of policy considerations that they can be said to be truly preferential and to cast a burden either upon other traffic or upon the taxpayer.

To summarize and conclude: An adequate transport system is essential to the economic development of underdeveloped areas; provision of a transport system in underdeveloped areas will normally be a function of government; where a government-owned railway was or is built largely for developmental purposes, operating deficits will commonly be incurred; operating deficits will be aggravated by a tendency to grant preferential rates to products important in the economy of the region, particularly exported products; deficits of government-owned railways constitute a burden on taxpayers; efforts to reduce the burden of operating deficits may lead to restriction of other modes of transport, particularly road transport, where it is competitive with the railway. This last policy may deprive shippers of cost and service benefits which motor transport could bring, and this, in turn, could have a retarding effect on economic development.

MELVILLE J. HERSKOVITS: A number of the generalizations found in this paper are of major importance for the understanding of the economics of societies experiencing economic development. Most of them stem from Elkan's recognition of the fact, by no means always present in discussions and analyses of such situations, that economic systems undergoing change are based on different assumptions, psychological values, and motivations than is the case with the more highly industrialized societies of Europe and America. As an anthropologist, I would urge that this is critical. It is, one may say, a factor of prime importance in all instances of change in traditional modes of life of any people. That is, if we recognize that behavior, which is culturally patterned, is learned, we are then in an area of investigation where the research models set by the physical sciences, which deal with natural phenomena, are not operative. New orientations which permit a greater degree of flexibility of approach and treatment of the data are called for and must be developed.

What I am saying, essentially, is that the models devised to analyze phenomena of economic change in the pecuniary, mechanized societies of Europe and America have been assumed to hold a universal degree of validity that has not been put to the empirical test. Certainly insofar as institutional factors are involved, the indications seem to point to a situation wherein the nature of the human responses involved vary so strikingly that generalizations drawn from the consideration of one society, or even of several societies lying in the same historic stream, are not necessarily valid for another. This is why I find Elkan's statement that the studies of trade-unions in Africa by labor economists "are both important and relevant, . . . provided . . . that it is realized that these apparently familiar institutions are part of a basically different economic setting." For, as he points out, this new setting "displays

certain genuinely novel characteristics," so that an institution found in the new scene "may really be extremely different in function and character from the institutions which bear the same name in other economies."

I find his analysis of the concept of the target worker especially penetrating. As one who has been concerned for some time with the study of various aspects of change in African life, I find that intellectual ground-clearing operations of this sort make up a considerable component of any attempt at scientific analysis. The amount of misconception, based on the repetition of ideas never tested by reference to the facts, seems to be especially large in the discussion of problems of this sort. Of these misconceptions, the idea that the target of the African worker must be immediate rather than long run goes deep. It stems, I imagine, from the concept of the African as a man incapable of long-term planning, who lives for the moment, this idea in turn being the intellectual descendant, in perhaps a more sophisticated form, of the earlier conception of the lovable but improvident savage. It is analogous, in the skew it gives any approach that incorporates it, to assumptions that underlie studies of the national income of African countries, whereby the factor of internal trade is overlooked because of the application of models derived from the non-African scene to the analysis of African economies. As Elkan shows, it is of the greatest importance, in considering the questions of industrialization and urbanization in Africa, to keep the role of the rural kinship group fully in the picture, and to understand that in its institutional role it is more than just a sociological phenomenon, but is to be compared to various systems of social security among ourselves. That is, in this case the transfer of the rural-urban dichotomy of Europe and America to the African scene distorts the picture and lessens clarity of thought.

Certain assumptions in this paper do, however, merit further examination. I am not sure that if a worker can be induced to bring his family to the city he will thereby be cut off from his rural setting and thus become committed to urban life. I have found it pretty general in Subsaharan Africa that even though an immediate, nuclear family group may inhabit the urban environment, the rights conferred by membership in a larger, extended family grouping, or in the clan, which are institutions of the countryside, are thereby given over neither physically nor psychologically. On the other hand, the temporary nature of employment in mines or towns or plantations, though perhaps a phenomenon marking labor usage in East Africa, would scarcely be true of the town-dwellers of Nigeria, whose urban traditions date back before contact with Europe. In the Congo, where the Belgians have been more successful in urbanizing the Africans, the problem of the temporary worker does not exist to any great degree, and the assumptions made by Elkan seem to be borne out. Here, however, a new factor has entered in recent years—that of the superannuated worker. Together with this, especially in the Katanga, the question has posed itself how, with increasing technological efficiency, the African urban workers, who were coming to be in surplus supply even before the recent fall of prices in the world market, could be induced to return to the rural areas from which they had come.

The proposition that life in the towns is unpleasant for the African can

also bear some examination. Certainly better housing, schools, and other facilities influence the decision of Africans to migrate to and remain in the urban centers. Yet, on the strictly economic level, concomitant burdens in the form of high rents and fees for services, for example, must be borne by the worker. These costs are based on land valuation and in the African parts of the cities return per unit of land is higher than in the European, since the density of occupation, the criterion for rates, is much greater in the latter than in the former. In any event, I would raise the question whether housing holds the order of importance in lowering the rate of short-term migration and increasing the population of permanent occupancy that is assigned to it in this paper.

I also find the argument concerning the relative play of force of tradition as against new economic circumstances difficult to follow. I could not agree more completely with Elkan when he points out that, as a rule, anthropologists are "just a little less critical when it comes to economic matters" than when dealing with "family structure, social custom, and religious belief." My only disagreement with this, indeed, would be that the indictment is phrased too gently. Yet, I must ask, is the dichotomy he seems to envisage between economic force of circumstance and tradition really valid? Are there not, rather, certain noneconomic aspects of the tradition of a people that bear on the economic phases of their life and interact with them?

I feel that here it is important not to fall a victim to the all-or-none fallacy. Thus I agree that it is going beyond the facts to assume that it is only the need to earn money with which to buy cattle needed to meet the socially sanctioned requirements of the bridewealth that must be given for a wife, that sends young Africans in the eastern and southern parts of the continent to become temporary workers in mines or factories. But, granting that there are other, more purely economic motivations that make of a man a short-term worker in industry or the mines or on the estates, is it not as important to refrain from overemphasizing these economic reasons as it is not to underestimate the force of the traditional ones?

Certainly I would agree with Elkan's statement that the problem he discusses is "very tough, complicated, and so far intractable." I would suggest, however, that its difficulties may be found less formidable if it is approached in terms of a cross-cultural, interdisciplinary attack. For while it is an economic problem, it is also a cultural one. One of the more important contributions of Elkan's paper, it seems to me, lies in the fact that he has made an admirable beginning in the use of the dual approach which, I am suggesting, is the one that will yield the most incisive results.

THE ROLE AND CHARACTER OF FOREIGN AID

PROBLEMS OF FOREIGN AID VIEWED FROM THE INSIDE

By C. Tyler Wood
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The problems of foreign aid, whether viewed from the inside or from any other side, encompass such a broad and complex area of human activities, of political, military, economic, and psychological elements, that any discussion of the subject presents the one who attempts it with a serious problem of selection.

It may be useful to start this review of the problems of foreign aid with a brief discussion of the organization which exists within the United States government for dealing with this program. The organization itself constitutes one of the problems of foreign aid, though by no means it smost difficult or important problem.

It is not usually realized by those who are not engaged in carrying out the foreign aid program how many elements of the United States government are involved in it. Most people know that the International Cooperation Administration is the operating agency for the nonmilitary part of the program and that the Department of Defense does the same for the military portion. It is also recognized that the Bureau of the Budget and the Congress have important parts to play. But many of the other departments of the government are also closely involved in the process. The Department of Agriculture has a great deal to do in assisting ICA, both with people and with data. It also has the chief responsibility for the handling of the agricultural surplus commodities made available abroad through Public Law 480. The Department of Health, Education and Welfare has a major interest and role in such important elements of the foreign aid program as are indicated by this Department's name. The Department of Commerce is constantly concerned, not only because of its contacts with American business, but also because practically everything done in the foreign aid program has some bearing upon the trade and the volume of business of people and organizations in the United States. The State Department, of course, has a very major role in the foreign aid program.

One aspect of the organizational problem has arisen from various metamorphoses and reincarnations which the foreign aid organization has undergone. It is interesting to look back to 1952, when there was no single operating agency responsible for the programs which are now carried on by ICA. The Point Four Program was administered by the

Technical Cooperation Administration, an agency within the Department of State. This program was carried out principally in the Near East and South Asia but had a further identifiable and separate segment—the semi-autonomous Institute for Inter-American Affairs which operated in Latin America. The Technical Cooperation Administration was quite loosely organized and delegated large portions of its operating activities to other United States government agencies. The Point Four Program was intended to be only of a technical assistance type with relatively small sums of money involved for the payment of the salaries of technicians to go with minor amounts of demonstration supplies and equipment necessary to make the technical assistance work effective. Even so, developments in the world soon impelled the Technical Cooperation Administration to begin to get into economic assistance programs of significant size. Examples which come to mind are Iran and Pakistan.

At the same time, the Mutual Security Agency was handling economic and technical assistance programs in Europe and in the Far East. These programs involved much larger amounts and provided substantial quantities of physical resources as well as technical assistance similiar to that made available through the Technical Cooperation Administration. The Mutual Security Agency was an independent government agency much more self-contained and tightly organized than the TCA.

Supervising and co-ordinating the Mutual Security Program was the Director for Mutual Security, located in the Executive Office of the President. This official was responsible for co-ordinating the operations of MSA and TCA with those of the military assistance program carried out by the Department of Defense and also for bringing to bear upon the program the political judgments of the Department of State.

The system worked reasonably well, however amazing and impossible it may appear from this description, though of course there were many creaks and squeaks involved in the functioning of this complex machinery.

In 1953 the Foreign Operations Administration was established with the responsibility for pulling together into one agency the various diverse parts of the nonmilitary portion of the Mutual Security Program which existed at that time. Its director also had the responsibility of co-ordination for the whole program, including the military. FOA was a single independent government agency located in the Executive Office of the President. It established central direction of the program and was the direct predecessor of ICA, the present organization. Internally FOA was organized into three main areas: operations, techni-

cal services, and management. The operations area was the central line or command part of the organization and was organized on a geographical basis corresponding closely to the country desks and regional structure of the Department of State. The technical services—agriculture, industry, and the like—were set up as staff offices with the usual responsibilities of such offices. The management area needs no separate discussion since it had the functions usually assigned to this part of a U. S. government organization.

In this organization one finds all of the usual bureaucratic problems of devising and operating an adequate decision-making process, of the multiplicity of clearances and agreements required, and the like. Further complications grow out of the well-recognized problem of relationships between headquarters in Washington and missions all over the world and the misunderstandings that arise due to the inadequacy of physical means of communication like cables and telephones. There is the never ending problem of trying to find precisely the right degree of decentralization. Other fruitful sources of argument and misunderstanding are the extent to which authority should be lodged in the operations segment of the organization and exactly how the technical services and management should play their parts. It is not a monopoly of the ICA organization in the U. S. government, but a good part of the business is done and much of the progress is made through what may be called "dynamic friction."

A major change in the organization took place in 1957. In that year the responsibility for co-ordination of the total Mutual Security Program was transferred from the Director of ICA to the Office of the Under Secretary for Economic Affairs in the Department of State. Mr. Douglas Dillon is now, therefore, the Co-ordinator with responsibility for pulling together all the major aspects of the program—the political, the military, and the economic.

Now let us move on to some of the problems of the aid program itself. The major problems which we in the ICA face arise out of the nature of the goals we seek. Many different expressions are given to these goals and they are often effectively and sometimes eloquently stated, though in very general terms. A reasonably comprehensive formulation which will be useful for our present purposes would be as follows: The foreign aid program has as its objective to aid in the development of political and economic systems in other countries of the world which will move in the direction of reasonable stability; will be able to contribute in appropriate measure to their own and the common defense against military aggression; will be based on the knowledge, consent, and participation of an increasingly wider circle of people in each coun-

try; and will develop enough dynamism to create within themselves the human and physical resources required for their further progress. In trying to accomplish this task, the problems, as seen from inside ICA, are staggering. In a large part of the world we find practically none of the elements required for the development of the conditions we seek to promote; many of the lesser developed countries are in turmoil and confusion as a result of the upsetting of their ancient traditions and customs. Often in these countries such emotionally charged movements as violent nationalism have full sway, visions of overnight industrialization are generally held, and vast impatience with the slow processes of development is the order of the day. Further problems arise from the fact that, at the other extreme, the small but powerful conservative elements resolutely resist the forces making for any change and improvement. The attainment of our objectives will clearly involve not only—in fact not chiefly—the provision of physical resources, but we shall have to rely heavily on the transmission and acceptance of ideas and attitudes, the building of necessary institutions, the provision of training to individuals. We are dealing here not merely, and not even primarily, with an economic problem but with the organization and functioning of societies in all phases of their existence.

As we in ICA survey our problems we are overcome with nostalgia for the good old simple days of the Marshall Plan. What a relief it would be again to deal with mature economies with decades of experience in producing and distributing goods, in supplying services, in handling financial problems! In the Marshall Plan countries were all the institutions required for the purposes of a modern nation state and the knowledge of how to use them. What was needed to accomplish restoration and recovery was the provision of some physical resources, plus the encouragement arising from the knowledge that these resources were available and from a realization that physical security against attack was growing. Having reached this stage we and our partner nations were on our way and traveled rapidly toward our goal. It was both an exciting and a difficult task and not without its uncertainties and trying times, but as compared with what we are dealing with now it was so much simpler! What adds further to our longing for the "good old days" is the fact that, during the Marshall Plan period, we had clear-cut objectives and definitive yardsticks by which to judge our progress. There were such convenient and relevant criteria as the movement of the size of the dollar gap (and statistics were reasonably reliable). We could in fact measure increases in trade and production and had useful indices of progress in the various areas to which we and our allies in Western Europe were devoting our resources, energy, and attention.

We are dealing with very different issues, with far more intangible and intractable problems, in the emerging newly independent countries. Because our task is so complex and so wide ranging, it is peculiarly difficult to translate the broad, general delineations of our objectives into more definite and precise formulations of what we seek to accomplish in the foreign aid program. Yet if our program and courses of action are to be well conceived and effectively carried on, we must have clearly defined, reasonably precise statements of purposes to guide us.

In this connection, it is becoming increasingly clear that the first step in determining our purposes and objectives more specifically is to sweep away some of the false beliefs which, in spite of mounting evidence demonstrating their invalidity, still influence us. Many of these have been stated so often that they have tended to become firmly imbedded in our doctrine.

The first of these is that economic development and rising standards of living produce political stability and guarantee rapid progress toward democratic institutions. This proposition is now generally discredited among thoughtful and experienced people, but it is amazing how often the concept recurs in discussions and speeches. Those who have studied the question or have had experience in some of the lesser developed countries know that the effect of economic development is often, and in fact is more likely at the outset to be, precisely the opposite of that claimed. One of the reasons why this belief is so harmful is that great numbers of people upon whose understanding and support the continuation of the foreign aid program depends reach the conclusion that the program is a failure because in some countries where it is operating there are serious and violent political disturbances and in others generals and armies are taking over and suspending constitutions and canceling out the holding of planned elections. Of course thoughtful people who deal with these questions do not rush to the conclusion that our aid programs should therefore cease to assist other countries to achieve economic development and higher living standards. It can properly be held that the ultimate achievement of responsible, stable, dynamic societies, based on widespread understanding and consent of the members of those societies, is improbable without economic development and rising living standards, whatever the immediate consequences of starting the process of such development may be.

A second mistake which has been made is that of seriously overestimating the extent of the influence which the United States can exert on the course of events in a given country through its aid program. We have fallen a prey to clearly exaggerated expectations, not only as to how rapidly progress in economic development can in fact take place in primitive countries, but also as to the effect which the provision of

economic resources and some technical training can and will have in stimulating progress toward a growing and self-sustaining economy and a democratic political system. We have gone so far as to assume that we can guarantee by our foreign aid programs the orderly progress of a backward country and insure that the violent and emotional ferment going on in some of these countries can be channeled into courses which we would consider constructive and in our own interest. We shall do far better if we have a more accurate view of what we can accomplish through foreign aid. Such a view will be reflected in more useful and meaningful statements of purposes and objectives which can supply better guidance in our operations.

A third harmful misapprehension under which we have been laboring is that we can accomplish our objectives in a relatively short time; that if we only set to it with enough vigor and enough resources we can clean up the job and thereafter relax in a comfortable and easy world with the sense of satisfaction so well expressed in the Gilbert and Sullivan couplet "and the culminating pleasure that we treasure beyond measure is the gratifying feeling that our duty has been done." It was not so long ago that there was a large body of opinion in the country and in the Congress which held that we should be able to stop foreign aid programs after one or at most two more years. In setting our objectives we must sweep away the false assumption that there is a quick or cheap or easy solution by which we can realize our hopes for the kind of world we have been seeking.

One more of the false assumptions which have tended to lead us astray is worth mentioning. This is the optimistic and cheerful belief that men in other countries of the world are motivated largely by a desire for a better life and that they will always behave in a rational manner with this desire in mind. One need only recall the many cases in recent years where the leaders and people of a country have been quite willing, in the name of national dignity or because of long standing hatred and antagonism for another nation, to take actions which clearly set back their chances of achieving economic development and better living standards.

Escaping from the influence of such false and misleading assumptions as these will enable us to set forth more clearly and adequately what we can expect to accomplish through the foreign aid program.

However inadequate as precise guides to courses of action our objectives may be, nevertheless we must do the best we can to state them, and some progress has been made in this field. At least such progress has been sufficient to bring to the fore another important further problem: that of working out a meaningful and valid connec-

tion between these objectives and the specific activities in which we are engaging and proposing to engage in the aid program. One of the most interesting accomplishments of the last few years has been the development of a programming process which attempts to seek out and identify the relationships of specific projects and programs in each country to our objectives in that country. In the process, our missions list the obstacles standing in the way of what we are trying to accomplish and propose programs designed to remove these obstacles.

As might be expected, sometimes the relationships asserted in these first attempts to carry out this system of programming are tenuous and roundabout, but the institution of this process represents an important step in advance.

Another problem that plagues us constantly in the ICA is what we have come to call the problem of "scatteration." There are rather complicated reasons why this practice is so hard to root out. We find, of course, in the lesser developed countries that the needs, if development is to take place, are legion. It is easy enough to identify weaknesses and problems. Our difficulty arises in that often our people in the field, eager to deal with them, are inclined to think that all these identified weaknesses and problems somehow have become our business and rush on to the further conclusion that they must be susceptible of treatment by the tools we possess in our foreign aid program. When you combine this with the fact that we never have had staff adequate, particularly in quality, to do all the things that we have undertaken to do and to do them as well as they should be done, you get some idea of the seriousness of the problem. We are attempting to do a big and complex job in the world with much less in the way of competent staff than we had in the early days of the foreign aid program. This is understandable because the program was then new and it had real appeal to the imagination of people. Now not much of the glamour is left. The wonder is that we have so many competent, dedicated people left in the agency after the buffeting it has received on all sides and that the quality of the performance is good in most cases and magnificent in some.

The most pressing practical operating problem of the foreign aid program is not the lack of physical resources but the lack of human resources. This is true of our own staff, as has been indicated; and it is particularly true of the countries whose development we are attempting to assist. It is increasingly borne in upon us that it is the lack of trained people, the lack of institutions which must be created and administered by human beings, the lack of traditions and of understanding minds that are the chief obstacles to achieving the objectives we and our friends seek to accomplish by working together in the Mu-

tual Security Program. It is not only the lack of technical skills required to operate equipment or to manage budget and fiscal affairs or to carry on the physical tasks required in a modern nation that must somehow be overcome. We are beginning to realize as never before how important in the successful systems of mature, developed countries are the skills of management and competence in organizing and flexibility and ingenuity in dealing with and directing the efforts of men and machines. Many of the people of the countries with whom we are dealing have no concept of this aspect of the management of human affairs. Yet such ideas have to be understood and experience must be obtained in management and organizing if anything approaching balanced and continuing development is to be achieved. Here is one of our most difficult problems.

A few other vital problems deserve brief mention in this discussion. The foreign aid legislation emphasizes the principle that our aid program must be based on the principles of mutuality and self-help on the part of nations which receive resources through the Mutual Security Program. This was one of the most important elements in the great success of the Marshall Plan. It is not so easy to find and keep before us and our friends in some of the underdeveloped areas a set of common objectives which we both seek and thus to accomplish the mutuality of purpose and action needed. It is true that we can all agree that we seek economic development and higher standards of living, but there are very different assessments as to how these are to be achieved and as to the part each of the partners should play in the process, especially where people are impatient and where politicians have promised rapid progress to the people upon whose support their continuation in office depends. We sometimes find these politicians first requesting and then demanding more and more aid with, it seems at times, the intention of contributing less and less effort and resources themselves. The danger of continuing to give aid in substantial amounts over a long period of years is one that concerns us because increasingly the other country comes to rely on such aid and with this tends to come, subtly and gradually, a decrease in the initiative and resolution and sense of responsibility for their own future on the part of the leaders and the people of the country concerned. It is not a simple or easy problem to continue our operations in certain countries and at the same time to avoid a greater and greater dependence of these countries upon us and upon our resources.

Another problem which worries us inside ICA very much indeed is that of finding a way to bring a larger proportion of the weight of the total human and physical resources of the United States to bear on our

efforts and operations overseas. The Soviet and Chinese Communist governments have undertaken foreign aid programs and can devote whatever means they deem necessary to these programs, since they control all men and materials in their systems. The United States government cannot command any but a small portion of the total resources of this country, and unless we succeed in marshaling these resources more effectively by enlisting the freely given interest and action of individuals and organizations, we shall not make the progress that we must in these critical times. There are a few encouraging developments on this score. For example, in the last two years we have found a way to make use of the very considerable resources of many of our colleges and universities in our program through the university contract system. After a period of great difficulty and much misunderstanding, all concerned agree that ICA and the U. S. institutions of learning are really marching in step and that the future looks most promising for this aspect of the program. This development is, in our view, particularly important because it is precisely in the areas of the greatest need, viz., the development of human resources and institutions, that our universities are peculiarly qualified to make a contribution. We have also very considerably expanded the number of our contracts with other private concerns, such as engineering and management firms, and we propose to press forward along this line. At this moment there are some encouraging studies being made on how to enlist the energies of private companies in our foreign activities to a much greater degree than we have succeeded in doing heretofore. There has been a great deal of talk and exhortation on this subject for many years with rather meager results, though it is only fair to say that there have been some accomplishments. The programs of guarantees assuring convertibility and guarantees against expropriations and war damage have helped. So have the treaties of friendship, commerce, and navigation negotiated by the Department of State. It looks as though the present program to find ways and means of stimulating the interest and effort of private investment and enterprise is on a broader and more imaginative and better organized basis than any similar programs in the past.

In this conference it may be appropriate to point out that among the private citizens who have made the most valuable contributions to the effectiveness of foreign aid programs and otherwise to the promotion of economic development in the world have been our economists. Much more remains to be done by the members of this profession, and they are especially capable of helping with many of our unsolved problems. For example: We need more light on how to promote the development of more reliable economic data in lesser developed countries; we

need guidance as to where we should concentrate our fact-gathering efforts in such countries—in what areas the availability of more data would be especially useful for our purposes; we know far too little about the question as to what rate of economic growth is desirable and feasible in countries under various different circumstances; light needs to be shed on the proposition that lesser developed countries must progress and build up their GNP, both total and per capita, more rapidly than the U.S. and other mature countries or some cataclysm will overtake all of us; if this proposition can be sustained, we need help in devising ways by which such a rapid rate of growth as required can in fact be accomplished in the real world without unacceptably huge contributions of aid or unduly violent repercussions in the political, social, and economic life of the country in question. We face many more such problems which the economist is best qualified to solve.

We shall never apply our resources in such a way as to deal adequately with the challenges facing us abroad until our citizens obtain a far better understanding of the activities and the nature and purposes of the foreign aid program. This is another problem which is of grave concern to us. The misinformation all over this country concerning what we do in the foreign aid program is alarming. As just one example, we find that many of our best informed citizens believe that we are still making available massive economic aid to the developed nations of Western Europe which took part in the Marshall Plan. In fact there are no Mutual Security economic aid programs in Europe except in Spain, Yugoslavia, and Berlin. These programs amounted to 82 million dollars in the fiscal year 1958 out of a total for the Mutual Security Program of 3.3 billion (military and economic obligations and reservations). There is a productivity agency in Paris to which we contribute a small sum each year and to which the European members contribute far more than we do. Yet the impression persists that we are making available billions of Mutual Security funds to Western Europe in economic grant aid. Military aid furnished Western Europe amounted to somewhat over 700 million dollars in the fiscal year 1958. Provision of resources in this form, while distinguishable from economic aid, does, of course, lighten the burdens of the recipient to the extent that he would, even in the absence of such aid, have felt impelled to purchase the items so provided. There are in addition sales in European countries, under the provisions of P.L. 480, of surplus agricultural commodities against payment in local currencies. The total of such sales in the fiscal year 1958 came to 369 million dollars.

We also find tales of alleged stupid performances repeated over and over again. For example, the charges that the foreign aid program sup-

plied iceboxes to Eskimos and dress suits to Greek undertakers keep cropping up despite the fact that these stories have been categorically disproved. No one would contend that some serious mistakes have not been made in a program as wide-ranging as ours, which is administered by ordinary, fallible human beings working in unfamiliar circumstances all over the world, but it will be necessary for the people of this country to obtain a fair and balanced conception of the program and its administration, an understanding of its accomplishments as well as of its failures, if we are to get the kind of support in this country which is needed if it is to carry on successfully.

We inside ICA are bedeviled by many more problems than can possibly be covered in as brief a compass as this. Mention of a few more will suffice to indicate the nature of some of them. There is the problem of the importance which should be attached to making an impact on the people of a foreign country by undertaking dramatic actions in their country—many serious blunders can be made by too great a preoccupation with "impact"; there is the problem of how to use effectively and to the best advantage the great quantities of local currencies, chiefly of the countries whose foreign exchange positions and domestic economies are weak, which are being acquired under the program and as a consequence of sales of surplus agricultural products through P.L. 480; there is the problem of our attitude and that of our friends in the world toward the Soviet Economic Aid Program—an especially pertinent problem in a conference the basic theme of which is "The United States Economy in a World of Competitive Coexistence"; there is the question of the proper balance between loans and grants in the program and such related questions as the rate of interest we should charge on loans in the light of the Soviet practice of charging 2 to 2½ per cent and often accepting payment in commodities which are surplus in this country; there is the problem of what kind of conditions should be placed on aid. We have heard much discussion of the slogan: "Aid with no strings attached." Certainly strings involving political conditions and which interfere with the sovereignty of a country cannot be condoned, but strings or conditions dealing with the proper and economical and effective use of the aid and providing for appropriate and feasible contributions by the country concerned to the common purposes sought, do have an important place in our programs; there are problems which concern the relationships of our economic operations to the military programs; our assistance to the activities of the Development Loan Fund, now a separate government corporation, and the relationships of our programs to loans made by that corporation raise other difficult problems.

There are a number of developments in ICA operations which show promise of contributing substantially to dealing more effectively with some of the problems which have been mentioned.

We have recently instituted a program to bring in promising young men who have finished graduate school and to give them a year's training as interns. After this period the decision is made as to whether they wish to continue with us and whether we want them. Many are proving to be splendid material. This program should do something progressively about the lack of an adequate number of competent people in the agency. It is most encouraging to see how many of our abler young men and young women are interested in coming into the ICA in spite of the fact that we are so often called boondogglers or rat-hole-pourers or other even more unsavory names.

Another constructive attack on one of our major problems is represented by the program to provide to our people greatly expanded language training and indoctrination and orientation in the cultural patterns of countries to which they are to go. We obtained in our legislation this year an appropriation of 8 million dollars over and above what had originally been requested to deal with this aspect of our work. The fact that this was so readily granted by the Congress is significant and encouraging.

A new policy has been instituted in the past year which will place greater emphasis on support of both U.S.-sponsored and other institutions of learning in the countries in which we are operating. Greater use will be made of available local currency funds in this connection; considerable attention is being paid to forward planning so that we may be better prepared for future probable developments such as the emergence of a large number of new nations in Africa. A panel of scientists has been constituted to consider how best to make use of science and research in the less developed countries and areas, with particular reference to Africa South of the Sahara, and the Director of ICA has recently returned from an extended visit to this area with some of the members of this panel; in this activity a close association has been set up with scientists in England who have had wide experience in Africa, and two English scientists were in the party which made the recent trip; we are trying to stimulate more actively the development of the use of solar power and the finding of a cheaper process for desalinization of sea water.

The program of evaluation instituted about two years ago is proving to be increasingly useful in identifying the problems we face and in indicating lines along which solutions may be sought. This operation involves the sending of two-man teams, each consisting of one senior

State Department official and one senior ICA official, to make evaluations of our operations in countries abroad. We allow plenty of time for this process in each country on the theory that evaluation of difficult and widely ramifying programs cannot be done in a hurry and at the same time be done effectively. An evaluation from start to finish—from the beginning of the study in the U.S. to completion of a report and recommendations—requires about five to six months.

There are, then, plenty of problems and difficulties besetting the foreign aid program as one looks at it from the inside. This paper has by no means dealt with them all. Many are easier to recognize than to solve. None of this justifies pessimism or a counsel of despair which would advocate abandonment of the program because the difficulties are many and hard to overcome. We must find better, more effective means of dealing with our problems, but it would not seem consistent with our national interest or our tradition to cease striving to make use of our great resources, both physical and human, for the constructive purposes of helping to create a world in which the things we believe in and desire have a better chance to survive and flourish.

THE CONVALESCENCE OF FOREIGN AID

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I

Viewed from the outside, the U.S. foreign aid program may be likened to a man recovering gradually from multiple sclerosis. Ever since the Korean war, it has shown clear signs of degeneration of the nerve tissue, jerking tremor of the muscles, and partial paralysis, which any doctor will tell you are the characteristic symptoms of that dread disease. Our foreign aid effort is still too timid, too spasmodic in its financing, too rigid and centralized in its administration. But the last year or so have seen evidence of real progress in controlling the symptoms. Before long the patient may be able to put his renewed energy to work again in the service of U.S. foreign policy.

The onset of the disease can be dated with accuracy. We took sick when the motivation of hope, on which an effective foreign aid program depends, was replaced by the motivation of fear on Saturday, the twenty-fourth of June, 1950.

Historians may record that the cleverest thing Stalin did in his quarter century of Kremlin rule was to start the Korean war. We are fond of supposing that the Communists lost that war because by heroic intervention we succeeded in bringing it to a bloody stalemate. But viewed as global strategy rather than just as a Far Eastern regional war, the North Korean attack accomplished much more than its planners could possibly have foreseen.

Remember that in those days we were binding ourselves to both friends and neutrals with that extraordinarily successful venture in applied co-operation, the Marshall Plan. President Truman had announced the Point Four Program in 1949, and Congress had just made our concern for progress in the newly developing lands a permanent part of United States law by passing the Act for International Development in the spring of 1950. These constructive moves allied our national interest to the national aspirations of two-thirds of the world's peoples. Both our spirit and our momentum were (from the Communist point of view) dangerously popular and dangerously successful.

Then the Russians struck through their North Korean puppets, and we stopped dead in our tracks. Within a week or two, as the implications of the North Korean invasion were married to the 1949 news

about Russia's nuclear capability, fear displaced hope as the primary basis of U.S. foreign policy. Support for European recovery, for investment and technical assistance in Asia and Africa, for economic co-operation with our Latin-American neighbors, even for the exchange of students and artists, had to be justified by reference to a new all-embracing criterion, expressed in the word "security." Now it was "mutual security" rather than "economic co-operation." After a little while we established U.S. Operations Missions abroad in place of our missions for technical co-operation. My colleague on this panel, C. Tyler Wood, will remember a winter afternoon when the two of us, searching for ways to explain the foreign aid budget in the new atmosphere, invented that confusing but politically effective phrase "defense support" to justify economic aid as a handmaiden of the military build-up in areas like South Korea, Formosa, and Vietnam.

We have yet to recover from the spiritual poisoning introduced into our political processes by a Soviet action half way around the world. The foreign aid agency in its successive reincarnations was progressively weakened by internal disorders: the fever of Harold Stassen's "patronage purges"; the chill of John Hollister's doubt that foreign aid belonged on the national agenda at all; the bureaucratic nightmare of overcentralized procedures like "Operation Blueprint"; the failures in Egypt and Laos and the less publicized troubles in a dozen other missions; the gradual disenchantment of Congressional friends and the unrelenting hostility of Congressional foes.

The most acute symptoms are disappearing now, and convalescence has begun. The program's leadership is no longer totally preoccupied with presidential ambitions or even with Ohio politics. The people and their Congress are impressed with the Moscow version of Point Four, and seem to have decided that there must be something good about our own "giveaways" after all. Obvious dangers remain, of which two will be discussed below: the delusion about local currency and the profusion of operating agencies in the foreign aid business. But first it may be useful to point to two of the unmistakable signs of strength which have made their appearance during the last year or two: the success with which the International Cooperation Administration has shaken off the "emergency" tag and the increased flexibility of the financial devices which can now be used to promote economic development.

II

"We are here embarking," President Truman said in his first message to Congress about the Point Four Program, "on a venture that extends far into the future. We are at the beginning of a rising curve of activity,

private governmental and international, that will continue for many years to come."

A long-term program of technical assistance and investment was, no doubt, the intention of the framers of Point Four policy. I have always counted it one of the more remarkable outcroppings of administrative courage when the chairman of our panel, then Assistant Secretary of State for Economic Affairs, told an inquiring congressman in a public hearing that technical aid might go on for fifty years or more. The program, indeed, made no sense except in very long-range terms.

Yet today, with ten years of this infinitely long time-span already behind us, the continuity of our interest in economic development in the less developed nations must be deduced from the simplest fact that it continues, somehow, from year to year. That continuity is not yet formalized in our foreign aid legislation, in the status of the government agency that administers foreign aid, or in the method of providing most of the investment funds and all of the technical services. Very broad agreement on the proposition that these matters are of permanent concern to us probably lies just beneath the surface of public acceptance and legislative confirmation. To bring it to the surface, however, would require the kind of presidential leadership from which we are currently vacationing.

But the world does not wait for an official American decision to join it. The requirements of the foreign aid program, financed though it is by year-to-year appropriations to an agency which would expire without authorization if not renewed each summer, have created a permanent aid program *de facto* if not *de jure*. The most striking evidence of ICA's permanence can be seen in the agency's own personnel policies.

Visiting the U.S. Operations Mission in Djakarta a year ago, I learned that more than a third of that ninety-six-member mission had been in a field assignment with the foreign aid program for more than four years. In other words, they were already on their third tour of duty or more. More than a quarter of all ICA employees in Indonesia had been in the field for more than five years. Other missions seemed to have comparable records; and percentages like these are the more remarkable since these missions typically include a good many short-term technicians sent out on spot assignments outside of the regular ICA employment system, and a number of secretaries whose career ambition—to find a man—is fulfilled during their first tour of overseas duty.

The facts in the field are in the process of being institutionalized at headquarters. In the absence of political leadership in the matter, the civil servants in the International Cooperation Administration have

initiated a wholesale reform of personnel procedures designed to create in fact, in the absence of legislation, a viable career system for ICA's field staff. The scope of this undertaking is impressive: it "means staffing some 4,200 positions in 60-odd countries encompassing a diversity of economic, cultural and political situations to stagger the imagination."[1] The program, which has now been in motion for more than two years, is full of features which indicate that ICA is becoming a career:

Selections are increasingly made not for a single mission position but for a "ready reserve" from which new mission demands for personnel can be quickly met. People between assignments no longer find themselves off the payroll if there is no other job ready to be filled.

Evaluation panels now are to evaluate each ICA employee with respect to his whole career in ICA rather than on his current job performance alone.

ICA's administrative staff have concluded that for many so-called "technical assistance" functions, "very highly specialized technicians are not what is needed."

Mission directors are exhorted to practice "balanced staffing"—maintaining at any given time a "sufficient cadre of employees experienced in working with that country to provide continuity for all essential functions leavened with a sufficient in-flow of staff new to that Mission to provide the essential stimulation of new ideas, new associations, and in fact new faces. . . . And the more of the Mission staff who also have had ICA/W [that is, Washington headquarters] experience, the better."

People are deliberately to be moved about, but not frantically often: "There should be a good reason for (1) moving a person after one tour in a given mission, or (2) not moving him after two tours."

ICA has embarked on an ambitious program of training, comprising a short-term orientation program for every new person; refresher training for technicians who are between overseas assignments; "developmental training" in special courses like the school for ICA program officers being conducted by the School of Advanced International Studies in Washington; the assignment of ICA technicians to universities or other research institutions to help them develop special competence in their own fields, or broaden their competence in public administration; and periods of on-the-job training ranging up to two years, to re-expose a technician to the "professional and social climate"

[1] This and other quotations in this section are from internal ICA policy statements and field instructions, notably Arthur G. Stevens, "The ICA Personnel System: A Progress Report," Sept., 1957.

of his own specialty in the United States, and incidentally to reorient "the employee and his family to U.S. policies and social values."

The agency has set up internship and other devices to attract junior professionals. This policy represents a wholesale revision of the earlier idea that a technical assistance program could only use established "experts" heavy with titles, degrees, and other evidences of longevity.

These are not the personnel policies of an agency that thinks it may go out of business next year or the year after. Perhaps we have now lived long enough so that nearly every American (except a few of the older senators) has forgotten the widespread impression, fostered during the Marshall Plan, that we could crawl back into our cocoon as soon as we had taken care of European recovery. There is even the possibility that, since "the people" know perfectly well that America is in the world for good, and ICA is acting on that assumption, too, Congress will eventually catch up with the parade.

III

When our aid programs began they were strapped hand and foot by ancient prejudices about international finance. The pattern was rigid: We would either give aid outright or we would make loans for bankable projects, repayable in U.S. dollars (which are by custom denominated "hard," in spite of the effect on their adamantine quality of chronic inflation in the U.S.A.). As the Mutual Security Agency's Advisory Committee on Underdeveloped Areas pointed out back in 1953, "in domestic private finance, many effective and ingenious financial instruments have been devised to cover the middle ground between straight bonds and ordinary equities, but in international public finance there is apparently no stop between pure loans and straight grants."[3]

The first attempt to fill this gap was a change in the historic U.S. policy of not accepting repayment of dollar loans in the currencies of the debtor countries. The change did not represent a softening either of the dollar or of the hard-nosed tradition of the United States Treasury; rather it represented a victory within the federal government for those whose interest in selling agricultural surpluses exceeds their concern about the value of the coin in which they are paid. The device authorized by Public Law 480 was simple: lend foreign countries the money to buy our surpluses (over and above their normal requirements from other sources, whatever that means) and accept repayment in local currencies if necessary (which it of course will generally be).

[3] *Economic Strength for the Free World,* a report to the Director for Mutual Security by the MSA Advisory Committee on Underdeveloped Areas (Washington, May, 1953), pp. 30-32.

Once the principle of local-currency lending was established, it was only a matter of time before it would be built into a regular lending institution, instead of being bootlegged into the government through the U.S. Department of Agriculture. In a far-reaching move last year, the Administration proposed and Congress approved a new semibank dedicated to the proposition that the underdeveloped world needs more and softer dollar loans and that the repayments need not be collected in dollars since they will be reinvested in economic development anyway.

The Development Loan Fund, established by the Mutual Security Act of 1957, has been reluctantly endowed by Congress with $700,000,000 in its first two annual appropriations. It makes loans ($564,806,000 had been "loaned or earmarked" as of October 20, 1958[3]) and is authorized to receive repayments in local currency and to relend the funds thus repaid. It can extend credits to entities other than governments—a departure from the practice of the more traditional banks and also from the previous practice under grant programs. Guaranties of repayment (by governments of the nations in which investments are made) are not necessarily required for investments financed by the Development Loan Fund.

The Fund's brochure, issued at the end of 1957, stresses its purpose as a device for getting fundamental economic improvements under way, as a prelude to later investment:

> Basic developmental activities frequently carried on by governments (such as power, transportation, communications facilities, irrigation, reclamation and drainage projects, certain educational projects) are eligible for financing by the Development Loan Fund. Proposals for such financing must show that the project will make a clear contribution to the long-range economic development and growth of the country concerned. Particularly favored will be those activities which lay a base for, or eventually make possible, productive private investment. Joint ventures between private American investors and private investors from abroad, including investors from third countries will be looked upon with favor.[4]

The Development Loan Fund got off to a slow start under inadequate leadership, but it is nevertheless a notably flexible instrument for financing development. It will, of course, never realize its potential until it is pulled in as part of each country's development program. At present it is tending to treat each loan as a separate project; the rigid procedures this banklike operation requires endangers both the Fund's flexibility and its administrative momentum.

On the international side, new agencies are likewise springing up around specialized financial techniques.After some years of debate inside the U.S. government, the Treasury decided that it would be harm-

[3] *Doorway to the Twentieth Century,* Dec., 1958, issue.
[4] *The Development Loan Fund* (Washington, Dec., 1957).

less to allow an International Finance Corporation to be created for the purpose of investing in foreign equities and trying to lure overseas more of those private dollar funds which are said to be panting for a sojourn abroad. The International Monetary Fund, after a long period of quiescent operations and expensive overhead, came to life with a somewhat broader interpretation of its mandate to help countries weather temporary balance-of-payments trouble. The International Bank for Reconstruction and Development, easily the most sensible and most useful instrument for economic development which the postwar period has produced, has built up its volume of lending cautiously but steadily, reaching into more and more unstable countries while maintaining the benevolent support of the most conservative financiers of Europe and the United States.

These Washington enterprises all deal in hard money. When they make loans they rather expect to be repaid, and at near-commercial rates of interest. Up in New York, by contrast, the support of the newly developing nations has meanwhile been coalescing around a soft-money proposal called SUNFED—the Special United Nations Fund for Economic Development. The original proposal was patently a "debtors' special": its board would be dominated by recipient nations, it did not provide for a strong executive director (unlike the World Bank, which is run by President Eugene Black and his staff, not by its Board), and it would be dependent on annual contributions by its members, like an international community chest.

For several years the United States opposed this scheme, fearing its control by the recipients and arguing that a really big economic development program should await the conclusion of an international disarmament agreement. But just a year ago, a watered-down version of the SUNFED proposal was passed by the U.N. General Assembly. It set up a Special Projects Fund to provide "systematic and sustained assistance in the fields essential to the integrated technical, economic and social development of less developed countries." However, the Assembly set the target for initial contributions so low—around $100,000,000—that the fund seems unlikely to make a significant contribution to these high purposes for the time being. Most of the past year, in fact, has been consumed by the process of collecting from participating nations enough of a grubstake with which to commence operations.

Other financing devices are still over the hill. The U.S. has indicated its support for a regional development bank in Latin America, and the President has announced in a speech to the U.N. General Assembly our support for a regional institution to promote international development

projects in the Middle East. The U.S. has also taken the initiative, at the recent New Delhi meeting of the World Bank and Fund, to increase the capital available from member governments to both those institutions. Moreover, the National Advisory Council is currently studying the idea of an International Development Association suggested by the Monroney Resolution, passed by the U.S. Senate last July. The proposed IDA is no new idea: it was formally proposed as long ago as March, 1951, in the *Partners in Progress* report of the International Development Advisory Board, then headed by Nelson Rockefeller. But the resolution gave new impetus to the scheme, by exhorting the executive branch to think about an institution that would provide "a source of long-term loans available at a reasonable rate of interest and repayable in local currencies"; facilitate "the use of local and other foreign currencies, including those available to the United States through the sale of agricultural surpluses . . ."; and ensure "that funds for international economic development can be made available by a process which would encourage multilateral contributions for this purpose."[6]

IV

The waxing enthusiasm for more flexible investment banks is certainly a sign of health, but it carries the germ of a new disease. Now that we have crossed the divide which separates dollar lending from local-currency lending, we are in some danger of deluding ourselves about the usefulness of the local currencies our various public banks and funds will be accumulating. We are building up legal promises by a growing member of countries to make payments to the United States under conditions which are bound to shatter many of our stereotypes about the nature of international financial obligations.

We may assume that nearly all of the countries needing soft loans, repayable in local currency, will already be stretching their resources to the limit or beyond, in the almighty name of economic development. Most of their governments will be establishing command over as large a proportion of their own resources as their underdeveloped tax systems and their precarious political credit will allow. In most cases, therefore, the local currency repayments will in no sense make additional resources available for economic development; at best, U.S. control of these resources will give some Americans the opportunity to influence the direction of public investment rather than the volume of resources devoted to it.

[6] The past history and future potential of this idea are analyzed in *The Case for an International Development Authority*, a series of lectures by Sir Robert G. A. Jackson, edited, with an Introduction, by Harlan Cleveland (Syracuse University Press, 1958).

Put yourself in the place of the Minister of Finance in Sarkhan* which has received a U.S. local-currency loan and is starting to repay it. You know that if you push the economy any harder, for example by printing more currency and letting it be used for publicly-financed development projects, you will endanger your whole five year plan, and incidentally your own political neck, by generating too much inflationary pressure. You are, therefore, quite willing to pay (never let it be said that little Sarkhan does not pay its solemn international obligations), but you are equally unwilling to have the resulting payment used by the United States for any purpose which will represent a net increase in your government's use of resources. You are therefore forced to suggest to the U.S. government that it either agree to attribute these funds to government expenditures that are already budgeted in the plan, or use them to retire part of your public debt, or in some other way effectively sterilize them. If the funds are used for net new investment not already taken into account in your careful planning for what Lincoln Gordon once called the "proper degree of flation," you must insist on offsetting the income effect of that investment with new imports, presumably financed with new loans or grants from the United States.

In short, the United States can look forward to effective use of the local-currency repayments of its development loans only if it simultaneously sweetens the pot with more American dollar aid for development. This is no new problem; we have seen the movie before, with different characters but a strikingly similar plot, during the Marshall Plan in Europe.

In the Italy of 1949-51, where the authorities were reluctant to spend as much on development as they prudently could, the "counterpart funds" deposited in local currency to match U.S. dollar aid were effectively used to add to the level of investment; the Southern Italy Development Fund (Cassa per il Mezzogiorno) had its origins in U.S.-Italian negotiations about the disposition of local currency which could not be spent without the agreement of the U.S. Economic Cooperation Administration. In France most of the counterpart was sterilized, but the French government's understandable desire to finance its deficit spending by siphoning off the counterpart rather than asking the National Assembly to increase the government's debt limit did give the ECA mission chief plenty of opportunity to complain to successive French Ministers of Finance about their regressive tax system and the huge deficit of the French National Railways.

Beyond these two cases, however, the use of counterpart in Europe was typically either dangerous or unimportant.

* The imaginary country in Southeast Asia conjured up by William J. Lederer and Eugene Burdick in *The Ugly American* (W. W. Norton, 1958).

In Greece and later in Turkey, we imported a made-in-America inflation by acquiescing in a volume of welfare projects (Greece), industrial development (Turkey), and military spending (both) which was quite out of line with what those underdeveloped economies could support. In Britain and Norway, which were pursuing a socialist policy of overfull employment with a high level of investment, the question of using the counterpart for additional expenditures never seriously arose. Those sophisticated governments would simple inquire solicitously which of the items in their already approved budgets we would most like to tell Congress had been financed with the counterpart of American aid.

As we move into an era of local-currency repayments, therefore, it behooves the economics profession to explain again and again to administrators, legislators, and the general public that under most of the given conditions, the local currency in question is merely money and should not be mistaken for real resources. It may look good on the books of the U.S. Treasury, and it may provide a useful occasion for influencing the internal economy of a friendly or neutral nation. But in terms of buying more development, most of it will not be worth a Continental.

V

What it will buy, of course, is the right to participate with the less developed country in making decisions about the allocation of the latter's resources. The presence of a local-currency account which could conceivably be used to add to the pressure on resources is a sword of Damocles over the central bankers and central planning authorities of any nation. The U.S. or U.N. agency which can decide to sterilize or to use these funds is inevitably a powerful factor in the budgetary and planning processes of the developing nation. If the government of the recipient nation and the U.S. or U.N. agency should decide to use the funds for additional development purposes, then the U.S. or the U.N. agency intervenes even more deeply in the internal affairs of the less developed nation. The decisions here involved—decisions about the size of a nation's army, the direction of its agricultural development, the priority of need between a community development program and a shiny new cold-strip rolling mill—are the very stuff of national sovereignty. Whatever external agency has a say in decisions like these is bound to take a deep interest in the internal politics of the recipient nation.

The depth of our intervention in other people's internal affairs should occasion no surprise at a meeting of the American Economic Association: many of its members are among the deepest interveners. The question is not whether we shall participate in the developing nations'

decisions about their own economic development. We are in the act already. Even an attempt to withdraw from our involvement would constitute a devastatingly important decision about the direction and volume of investment in half a hundred countries. The disquieting questions about our involvement have to do with technique.

Are we using our gigantic strength in the most effective way to promote economic growth associated with the development of freer political institutions? The answer is too clearly, no. And the reason for our frequent ineffectiveness is also too clear for comfort: we are retarding and complicating the process of economic development by the manner in which we go about aiding it.

Bluntly put, the trouble is that oldest malady of organized human endeavor: too many cooks.

Gazing out at the world from our charmingly pluralistic society, we see no particular damage in setting up a new agency every time we get a new idea about how to finance public investment abroad or want to start a new program of technical assistance. As things now stand, the leaders of an underdeveloped country will normally deal with a minimum of sixteen and often as many as twenty different agencies purveying various kinds of assistance to their development plans. In our enthusiasm for modernizing every economy we can reach, we have tended to close our eyes to the administrative burden which we place on the governments of the less developed countries by proliferating the independent agencies we create to "help" them. Perhaps it is time to take stock.

On a visit to Indonesia a year ago, I had occasion to examine the extraordinary range of activities which now come under the heading of foreign aid. Here is a nation with which we have no military entanglements and a rather minor program even of economic and technical assistance. The variety of outside economic and technical assistance is nevertheless impressive. Here is a partial listing of the main projects under way at that time, omitting a large number of less significant relationships:[7]

U.S. State Department	Educational and other exchange projects
U.S. International Cooperation Administration	Agricultural Experiment Station and Agriculture Extension
	Mining Operations
	Industrial and Development Training Institutes
	Malaria Control
	Medical Education
	Vocational Education Teacher Training
	University of Indonesia (Technical and Science Faculties)—contract
	Police Administration—equipment and training grants—contractors

[7] Based on interviews in Djakarta during Nov., 1957, and on a USOM document, *U.S. Assistance to Indonesia*, dated May, 1957.

U.N. Technical Assistance Administration	Small Industries Program
	National Planning Bureau Experts
	Budget Control
	Shipping
	Motor Vehicle Maintenance and Repair
	Regional Housing Research Center
	Social Welfare
	Training in Public Administration (low-level)
UNICEF (Children's Fund)	Maternal and child welfare
	Anti-yaws campaign
	Vaccination campaign
	Vegetable milk plant
International Labor Office	Labor Statistics and Occupational Classification
	Vocational Training School, Bandung
World Health Organization	Assistance to the Ministry of Health in programs for the control of yaws, malaria, plague, trachoma and tuberculosis
	Specialists for various medical schools and institutes
International Civil Aviation Organization	Training of aircraft engineers, pilots, radio maintenance technicians, traffic control experts, etc.
Food and Agricultural Organization	Inland Fisheries
	Forestry
	Combating Foot and Mouth Disease
	Soybean milk plant, Djogjakarta
U.N. Educational, Scientific and Cultural Organization	Teacher training
	Library Science Training
	Audio Visual Aids
	Low Cost Text Book Production
Ford Foundation (private)	English Language Teacher Training
	Agricultural Co-operatives
	Economic and Social Research Institute
Asia Foundation (private)	Private University Training
	Library Assistance
	Economic and Social Research
	Training leaders in co-operative systems

None of these eleven agencies is in the investment business as such; so the Indonesians will also deal from time to time with the U.S. Export-Import Bank, the U.S. Development Loan Fund, the International Bank for Reconstruction and Development, the International Finance Corporation, and (improbably) the International Monetary Fund. When the U.N. Special Fund is set up and running, Indonesia will certainly be both a member and a client. And if they can use any of our agricultural surpluses, the Indonesians can get a local-currency loan from ICA to buy them from the U.S. Department of Agriculture. That makes eighteen agencies. To complete the list you would have to add technical aid from the Colombo Plan plus bilateral investment and technical-aid relationships with the British, the Germans, and the Russians, among others. If you moved farther west to Pakistan or Iran, you could add the incredible complexity of a large U.S. military assistance program. Nor does this inventory include most of the private foundations or the myriad semiprivate agencies that use dollars to perform services of various kinds for foreign governments. The ICA last year reported it had 470 contracts with American universities and 848 con-

tracts with other firms or individuals—a total of 1,318 contracts, involving an overseas staff possibly exceeding the size of ICA's own foreign establishment. Ninety-six per cent of these contracts were for assignments in Asia, Africa, and Latin America.

I would not want to imply that there is no co-ordination among these agencies in the field. A really underdeveloped nation can hardly be expected to have more than one good bar in its capital city, and much informal co-ordination is accomplished there among agency representatives whose responsible line of command runs 10,000 miles back to Washington—or, in the case of U.N. technicians, to New York, Paris, Geneva, or Rome.

But by and large, it is up to the government receiving the aid to co-ordinate the aiders. Governments which are far from being able to co-ordinate the effective use of their own resources and which are, indeed, receiving advice on public administration from several technical assistance agencies because of their inability to man the professional and administrative tasks the modern world thrusts upon them are expected to mold into an integrated program the knowledge, skills, prejudices, and weaknesses of hundreds of foreigners, most of whom are unaware of the history, the politics, or even the language of the country whose "domestic" policies they are influencing. And the situation is getting worse, not better. In most countries, the number of Americans and U.N. agency advisers is almost certainly increasing more rapidly than the local government's administrative capacity to cope with them.

VI

The problem in administration with which our own foreign aid pluralism thus presents us is a complex one, but the outlines of a solution are not hard to discern. The key word is "consolidation" of overseas effort.

At present the U.S. has the Export-Import Bank for "hard" loans, the Development Loan Fund for "soft" loans, and the regular ICA organization for grants and technical assistance. There is no reason why these several techniques should not be administered at different windows of the same financial institution; indeed, since the advent of Douglas Dillon as Undersecretary of State for Economic Affairs and the departure of George Humphrey from the Treasury, there has been a notable improvement in the degree to which all these U.S. agencies have been acting as though they were part of the same government. What is now needed is a sufficient delegation of programming responsibility to the field to enable the ICA mission chief to use the whole range of financial instruments to further the purposes of general U.S. policy in each country. This might mean abandoning the cherished ideal that every "loan," hard or soft, should relate to a "project" which is separately

justifiable on pseudo-economic grounds. Such a policy might also require mission chiefs to be men of self-confidence and initiative, able to handle the increased responsibilities and manage the greater complexities which this kind of consolidation would involve. ICA has had a good many such men in its foreign service, but the ICA staff in Washington would be the first to agree that ICA's present structure, with its overcentralized "project procedure" and its frequent and lengthy Washington clearances, does not encourage men of top-flight executive ability to gravitate toward field work with the organization.

Nor is it enough for the ICA to do its own job effectively. The purpose of economic and technical assistance and foreign lending is not merely to promote economic development in general; it is to assist in the development throughout the free world of political institutions that are both increasingly effective and increasingly based on consent of the governed. We do not simply want our friends to have higher rates of economic growth; we want to be able to live with them as friends in a viable world order.

Most ICA overseas personnel will tell you that this, the political aspect of the American government's overseas operations, is the Embassy's job.[8] In part, it is.

The problem is to tie the economic aid instrument more closely to a clearer view of the foreign policy purposes that instrument is supposed to serve. This cannot be done with mimeographed "position papers" handed down by planners in the State Department; it can be done effectively only in the field, country by country. It requires ambassadors who are experienced public executives, who know what the economic people are doing and are not afraid of the executive responsibility for supervising them. On the ICA side, it requires ICA mission chiefs who are both competent and who are encouraged to interest themselves in the political as well as the statistical effect of the foreign aid program. The ultimate judgment on their success will be measured not in economic indices but in the building of durable and relevant institutions.

Successful operations in this new field of political economy thus call for daily co-operation between a politically sensitive ICA mission chief and an ambassador who is literate in economic operations. The combination is still much too rare.

On the international side, changes in structure are also in order. The case for an International Development Authority is not the need for one more agency with one more financial gimmick to offer to the un-

[8] On the military side, the general in charge of the Military Assistance Advisory Group will likewise tell you he has nothing to do with politics. This is one reason why we do not seem to be using effectively our military contacts with the army officers in a dozen countries who, because they hold the key to the maintenance of public order, can make or break the civilian government at will.

derdeveloped world. The need is for an agency which can put all the U.N.'s programs of technical aid and investment to work in tackling problems the way they actually arise in the real world of economic development—that is to say, by countries and regions, not by "functions" like mosquito control, rice production,and elementary schooling. If the World Bank had not been hemmed in by the need to convince the world's hard money markets of its financial respectability, it might have developed as such a co-ordinating device. As it is, the Secretariat of the United Nations tries rather ineffectually to tie together the threads of the development programs of a half dozen specialized agencies. These ultrasovereign bodies, dealing separately with health, food and agriculture, education and culture, labor, civil aviation, children, and money, are much too jealously conscious of their independence to permit a mere committee in the Secretary-General's office to enforce the "country program" approach.

It is surely evident from our fifteen years of postwar experience with foreign aid that in dealing with some of the world's most crucial areas the value of operating through an international agency is very great. In many countries, particularly in Asia and Africa, the influencing of domestic decisions about economic development, political arrangements, and government operations is a task too delicate to be entrusted to an official, no matter how tactful he may be, who officially represents a government with overwhelming military strength. The leaders of a nationalistic government can hardly afford to agree with even the very soundest advice if it is proferred by men who, as a Japanese once expressed it, "carry the H-bomb in their pocket." The International Bank has proved again and again that the same American who would get nowhere operating out of an Embassy is able to become the trusted adviser in a newly developing country if he represents an agency of the United Nations.

All our aid cannot be administered through international agencies. There will always be situations where our security interests make a bilateral program more flexible: "defense support" countries such as South Korea, Formosa, and South Vietnam are obvious examples. But for most of the area from Indonesia around to Morocco, the need is urgent to create an effective system of internationally sponsored aid.

An International Development Authority with enough funds for massive aid to economic development would also provide a base from which to launch regional experiments in economic co-operation.

Each region's institutional needs is different from the others, but there is a strong case for a regional approach of some kind in the whole of the underdeveloped world. The Latin Americans have already begun to create institutions for direct co-operation with the United States

through the Organization of American States. The Middle East lends itself to the creation of a development authority which can put to work for regional economic growth the vast oil profits of some of the Arab nations. The development of Southeast Asia could be rapidly advanced if Indian political leadership and Japanese industrial capacity can be married in a regional institution with enough U.S. and European backing and enough small-country acceptance. In Africa the weak emerging nations will also need international attention to the gap between their expectations of economic advance and the poverty of their financial and administrative wherewithal.

In all except the Latin-American case, an International Development Authority could, more effectively than the U.S. government, raise the crucial questions, call the relevant parties together, provide the initial outside capital, and furnish temporary administrators to get things moving.

Foreign aid is not the road to popularity; so let us not delude ourselves that by working increasingly through international organizations we are frittering away a valuable public relations asset. A story is told in India about a rich Bengali who was informed that a "friend" of his really hated him. "I don't know why that man should hate me," he said. "I've never helped him in my life." We are not so fortunate. But we do have the option of operating so as to convince the nations that when it comes to economic development, we are dependable, long-time friends, willing to work with them as equals in tackling the most exciting tasks of our time.[9] As for popularity, Richard Armour seems to have said it all, and made it rhyme besides:

In foreign lands they do not love us
Instead of hugging us they shove us.
But one with even slight acumen
Can see that it is only human,
For being host and guest soon ends
The friendship of the best of friends.[10]

[9] In the original Point Four of his 1949 inaugural address President Truman put more emphasis on international aid than is now remembered: "We invite other countries to pool their technological resources in this undertaking. Their contributions will be warmly welcomed. This should be a cooperative enterprise in which all nations work together through the United Nations and its specialized agencies wherever practicable. It must be a world-wide effort for the achievement of peace, plenty, and freedom."

[10] Quoted in Irving Kristol, "Letter to an American," *Yale Rev.*, 1958, p. 636.

AGRICULTURAL SURPLUSES AND FOREIGN AID

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As one surveys, with an eye to the future, the use of surplus agricultural commodities by the United States as an auxiliary to foreign aid, three facts stand out: (1) During the four-year period ending June 30, 1958, the United States arranged the export of 6.8 billion dollars of farm surpluses under authority of Public Law 480 (in terms of costs to Commodity Credit Corporation). (2) Recent estimates are that farm surpluses will continue to be produced for at least another five years, probably longer, at a rate equal to or exceeding that of the last five years. The investments and improvements already made and in progress will bring this about in the short run, even if over-all price incentives are significantly reduced. (3) The extension of P.L. 480 authority for one year and in the amount of 1.5 billion dollars received strong bipartisan support in both houses of Congress earlier this year.

Together these facts would seem to indicate that pressures for a P.L. 480 type program probably will continue for several more years. This being true, discussion of the subject "Agricultural Surpluses and Foreign Aid" seems particularly appropriate at this conference.

The comments that follow are based on some seven months' study of P.L. 480 operations by the writer in Washington and in six major recipient countries. First I shall deal with facts and principles and then attempt to evaluate the program, both from the point of view of recipient countries and from that of the United States.

Nature and Extent of Surplus Commodity Assistance

The 6.8 billion dollar total surplus disposal under P.L. 480 referred to above was implemented under the various types of programs authorized by the Act as follows:

	Billion Dollars
Sold for local currencies, under Title I	4.0
Famine relief and related programs, under Title II	.5
Nonprofit voluntary agencies and intergovernmental organizations, under Title III	1.4
Barter contracts, under Title III	.9
Total	6.8

Of the 4.0 billion dollars of U.S. products sold under Title I, wheat was by far the largest item, accounting for over 40 per cent of the total, as indicated in the following tabulation:

Commodity	Unit	Quantity in Millions	CCC Estimated Cost in Billions
Wheat	bu	$616.0	$1.7
Cotton	—	3.2	.7
Fats and oils	cwt	24.4	.4
Feed grains	bu	161.9	.3
Rice	cwt	28.4	.3
Tobacco	cwt	2.0	.1
Other	—	—	.2
Ocean transportation	—	—	.3
Total			$4.0

This 4.0 billion dollars of products, in terms of CCC costs, generated a 2.8 billion equivalent in the foreign currencies of participating countries as follows:

Country	Million Dollar Equivalent
India	$ 419.4
Yugoslavia	294.6
Spain	283.1
Pakistan	186.1
Brazil	179.9
Turkey	162.6
Italy	152.9
Japan	150.8
Korea	132.0
Other	873.0
Total	$2,834.4

Of the total local currencies generated by sales under Title I of P.L. 480, as of March 31, 1958, about 70 per cent (1,998.2 million dollars) had been allocated for use, by the Bureau of the Budget, and 20 per cent (550.2 million) had been disbursed.

P.L. 480 disposal accounted for an average of 26 per cent of all U.S. exports over the past four years, with a range from 13 per cent in 1954-55 to 33 per cent in 1956-57, as indicated in the following tabulation (covering fiscal years):

	Millions of Dollars				
	1954–55	1955–56	1956–57	1957–58	Total
P.L. 480 exports	$ 407	$1,014	$1,553	$1,016	$ 3,990
Other exports	2,737	2,479	3,171	2,984	11,371
Total	$3,144	$3,493	$4,724	$4,000	$15,361
P.L. 480 as percentage of Total	13	29	33	25	26

In the 1957-58 fiscal year P.L. 480 shipments accounted for about half of U.S. total exports of wheat, cottonseed and soybean oil, and rice, and about a fourth of those of corn and cotton.

These data provide a picture of the major dimensions of recent surplus agricultural disposal by the United States. From this it is apparent that such disposal constitutes a significant phase of both U.S. exports and U.S. foreign assistance.

P.L. 480 Operations in Recipient Countries

United States food-fiber assistance activities under P.L. 480 in recipient countries have varied as the result of numerous factors such as the foreign exchange position and the food-fiber deficits of the country and the presence or absence of a U.S. assisted defense effort. The greatest volume has been moved into countries characterized by a relatively low per capita level of food-fiber consumption and by a substantial food-fiber deficit and a chronic foreign exchange shortage.

P.L. 480 Has Been Substituted for Other Forms of Assistance: Generally speaking, without P.L. 480 assistance some of the need for food and fiber in low-income countries would have been met by famine relief, dollar aid, or in some other way.

The amount of additional United States dollar aid or famine relief that would have been provided to food and fiber deficit countries during the past four years in the absence of a P.L. 480 program is hard to determine because the recipient probably would have consumed some less had procurement been more difficult. However, it seems probable that such aid would have exceeded the level of special food assistance that prevailed during the period 1950-53 because in certain large areas of the globe the combination of adverse weather, disappointing productivity gains in the agricultural sector, and rises in per capita consumption levels had increased food deficits. An unpublished estimate indicates that between 1954 and 1957 as much as 2 billion of the roughly 4 billion dollar Title I movement would have been provided by the United States under special programs in the absence of P.L. 480 legislation. This is in addition to the 500 million dollars of products moved under Title II.

Need to Plan for Termination of P.L. 480: In assessing the net contribution of P.L. 480 to internal economic development, local governments inevitably have had to give thought to the fact that the United States surpluses will not always be available. In the initial years of the program, this concern was evidenced by a desire on the part of recipient countries for assurances from the United States against such a contingency and insistence in some instances on the making of a multi-year agreement.

However, as P.L. 480 has continued, confidence that assistance from U.S. surpluses will continue seems to have strengthened in the minds of recipients until now certain countries are implicitly taking them into account in their own forward economic planning.

For the good of both the United States and of the local governments, it is important that the subject of future availability of commodities be frequently reviewed, and that the United States adequately anticipate and forewarn of any diminutions in P.L. 480 assistance. The danger is that P.L. 480, by making food and fiber more plentiful in recipient countries, may reduce the incentive for developing local agricultural resources. In this respect the author found no real evidence that this was happening as the direct result of U.S. imports having depressed local market prices below prevailing levels which, in turn, would reduce incentives for expanded agricultural production. On the other hand, there was reason to ponder whether P.L. 480 might be reducing incentives for the expansion of the manufacture of such agricultural production requisites as fertilizers, chemicals, and equipment by retarding investment in such plants. The danger is that investment funds will be channeled into other uses on the theory that agricultural development can be deferred. This issue is highlighted by the rather keen competition between agriculture and industry as claimants for capital resources—a situation which prevails generally in the less developed countries.

Value of Local Currency to Recipient Country

In terms of economic theory, it can be argued that the local currency of a low-income country held by a foreign government, such as the United States, has but limited direct or intrinsic value because the government of a recipient country has the power to create its own currency at will. Continuing this reasoning, one can contend with considerable merit that the release of such local funds by the United States, within such country, has little or no positive effect on the rate of employment or the rate of economic development. Moreover, should the existence of such United States holdings cause a reduction in the volume of United States dollar aid to such country or should the release of currency add to inflationary pressures, the rate of economic development might even be impeded.

Actually, to date the contribution of local currencies from P.L. 480 sales towards economic development has been further limited because the bulk of it remains unexpended. About 30 per cent of these currencies have been reserved for United States expenditures not directly associated with country development. As indicated in an earlier table, only about one-fifth has been put to use—the balance remaining on deposit to United States account. While this delay has been occasioned

by a complex of factors which vary country by country, an important one has been that the countries, in general, have not felt an urgent need for the funds. This, in part, reflects the fact that the United States has attached conditions to the use of funds—including maintenance-of-value clause as a hedge against currency depreciation—which have retarded their use. Alternatively, governments have turned to other sources, including that of direct issuance. In general, the maintenance-of-value provision has no real value except in the case of countries where the United States ultimately can convert local currencies to dollars. By and large, inflation is not a great hazard in these countries, and in countries where it is a hazard, any possibility of the ultimate conversion is remote. Therefore, the United States probably would do well to stop insisting on this phase of P.L. 480 agreements in the future.

Indirect Values of Local Currencies: Although the direct value to the recipient country of local currencies held by the United States is limited, certain indirect values are worthy of note, among which are the following:

1. *Can Help Aggregate Local Currency for Development.* P.L. 480 sales can serve as a device for aggregating local currencies which can be used for economic development. This particularly is true in countries where tax collection is inefficient and where higher rates yield little additional revenue. In one country, it was noted by the author that the P.L. 480 local currencies had been providing a substitute for further taxation as a source of revenue for economic development.

These increased proceeds can be made available for development that otherwise would not have taken place, provided they are properly channeled and administered through the private or public sectors.

Of course, it can happen that in effect the local sale of P.L. 480 products will generate twice its value in currency or credit—once when the local government expands its credit or currency in order to avoid a deflationary effect from the sale of the commodities at the consumer level and again, later, when the United States-held currencies are put to use. This, of course, will have an inflationary build-up unless the government, simultaneously with the second phase, takes offsetting measures. In governments with weak fiscal arrangements and low fiscal integrity, there sometimes is local support for inflation.

2. *Can Increase Borrowing Power for Development.* If properly coordinated with other economic programs, the P.L. 480 program improves the borrowing power of the country. The country becomes a better financial risk in that its debt service capacity has been increased. This, of course, is more true if the program is expected to continue for some years than if it is looked upon as only short run.

3. ***Proceeds Can Help Stimulate Growth of Private Sector.*** There is a rather strong tendency in underdeveloped countries to look to government to bring about innovations in economic development. Paradoxically, there almost universally is reliance on the private sector for carrying out certain types of development. In some cases this reliance seems to be increasing as government plans fall short of goals.

In this mixed situation, there appears to be opportunity to augment the rate of local development and strengthen the private sector, relatively, by earmarking substantial country currency proceeds for use as loans to private enterprises.

In the longer run, the role of private enterprise in developing countries is going to depend upon how well it performs—both with respect to output and to assuming public responsibilities in terms of price, wage, investment, and dividend policies. As discussed later, the use of a portion of P.L. 480 funds to assist education in business administration, including programs for training middle and advanced management, could prove invaluable in strengthening the private sector.

P.L. 480 negotiations themselves provide a valuable medium for advancing mutual understanding of the appropriate role of private enterprise in each country.

4. *Proceeds Can Stimulate Need Services.* A portion of the local currency proceeds accruing to the United States can be used to strengthen such basic public functions as education, health, and research. In doing this, emphasis should be placed on the phases of these functions that are lagging seriously behind the needs of the country. Such assistance should be provided for the purpose of helping to get such functions going, but only with assurance that other sources of support would become available in a reasonable time.

Particularly critical in most low-income countries is the need for technical training at all levels; the teaching of business management and public administration; the training of teachers for elementary and secondary schools; scholarships for brilliant young people who lack other means of financing higher education; the training of nutritionists and health personnel; and the training and development of research technicians. To some extent, support also might go to the erection of facilities—particularly those of a pilot plant nature.

One means of channeling funds into such uses in an orderly and considered manner would be by the creating of a special joint United States and local country nonprofit foundation which would be governed by a board composed equally of outstanding citizens from each country.

Not only could some of the initial proceeds from P.L. 480 sales be used in this manner, but also the proceeds from loan repayments—thus

continuing the source of funds over the repayment period, which may run as long as forty years.

Use of Proceeds for Regular U.S. Expenditures Gives Limited Benefit to Recipient: To the extent that the United States utilizes P.L. 480 foreign currency proceeds in payment of local obligations which otherwise would have been met in dollars, the dollar reserve of the country is correspondingly reduced. This, in turn, reduces the amount of foreign exchange available for economic development. In essence, the result is the same as if the United States had converted the local currency proceeds to dollars and then spent them to defray United States obligations in the country. In some countries this is done with a significant portion of the P.L. 480 assistance.

Limited Opportunity for Barter

P.L. 480 authorizes the U.S. to barter farm surpluses for commodities of value to the United States, including strategic materials. During the four-year period ending June 30, 1958, the U.S. moved in this manner products valued at 924 million dollars—mostly during fiscal years 1956 and 1957. However, this method was sharply curtailed during 1957 because of protests from other countries—particularly Canada. A review of the facts indicates that considerable of the bartering was done at the expense of commercial exports, including those of the United States.

This is because the principle of additionality to normal purchases by recipients was not applied to barter as was true in Title I sales.

In fact, if barter transactions are to be of mutual benefit to the recipient country and to the U.S. and in addition not injure other exporters, there is need for a policy of additionality to be applied on both ends of the exchange. Not only do the other country's imports of food and fiber need to be in addition to normal commercial imports, but its export item must be surplus in the sense that it could not be sold into a hard currency area. Otherwise, the country might as well have sold its products and then purchased the surplus food and fiber for cash.

Value of Local Currencies to the United States

The intrinsic (that is, money) value of P.L. 480 foreign currencies to the United States is a direct function of the ability eventually to convert such currencies to dollars, either by direct conversion or by substituting them for dollar expenditures.

In general, the United States cannot for a decade, and in many instances considerably longer, expect to make such conversion in the low-income countries because of the adverse effect this would have on the

rate of economic development. The lower the country on the economic ladder, the more this tends to be true. Conversely, countries which could readily convert local currencies to dollars are in little need of P.L. 480 help.

In countries where conversion of local currencies to dollars (or their equivalent in services or goods) cannot be expected, there is no real economic gain achieved by substituting local currencies for dollars in payment of United States obligations within the country. To do so merely correspondingly increases the need for dollar aid or penalizes the country by reducing its over-all inflow of dollars from defense assistance, military aid, embassy operations, etc.

Interference with Other Exporting Countries

Other countries exporting farm commodities from time to time have accused the United States, by its exports under P.L. 480, of interfering with their established markets. Considerable of this objection has been well founded—particularly that concerning certain barter transactions during the first years of the program. As already pointed out, in these the U.S. somewhat narrowed its own commercial export markets as well as those of other countries.

However, in the over-all trade picture, it is hard to demonstrate that the volume of commercial trading has been seriously upset by P.L. 480. The commercial movement, world wide during the past four years, has continued in a manner generally consistent with previous trends.

Also, it should be pointed out that U.S. officials are doing a better job today of safeguarding commercial markets than was true at the beginning of the program. Contributing to this has been the change in barter policy already referred to and less use of P.L. 480 to alleviate foreign exchange shortages in countries having relatively adequate food-fiber supplies.

Even so, there still remains real concern on the part of other exporting countries that the U.S. will undercut their established markets. Certainly this is a phase of P.L. 480 that will necessitate alertness and, at times, self-restraint on the part of U.S. officials.

Effect on Domestic Adjustments

In appraising U.S. surplus disposal, one should not overlook its possible effect on U.S. agriculture. Has P.L. 480 retarded the rate of adjustment in the agribusiness sector of the economy by reducing the pressure of surplus stocks on the markets? If so, how serious are the implications? Even though discussion of national farm policy is outside the scope of this paper, brief mention here is made to it because of its importance.

Opportunity for Market Development

When P.L. 480 initially was before Congress, much stress was placed by its proponents on its value as a device for building commercial markets for U.S. products. Any progress along these lines will be slow and results likely will vary commodity by commodity. The limiting factor, of course, is the shortage of foreign exchange on the part of countries needing our food and fiber. Hence, the conversion of P.L. 480 outlets to dollar markets probably will be slow and limited to those commodities for which the U.S. has a substantial comparative advantage.

However, in the short run, the market development efforts under P.L. 480 are paying a by-product dividend that is worthy of note in providing representatives of numerous commodity groups an opportunity to travel abroad for the purpose of exploring foreign markets. The dividend is in the broader understanding gained by these persons plus the know-how which they, in turn, can pass on to the staff of U.S. embassies, foreign governments, and the commercial trade.

Evaluation

In the previous sections of this paper I have tried to present certain pertinent facts regarding surplus agricultural disposal and foreign aid and trace major implications flowing from them. Now I shall attempt to evaluate foreign disposal efforts—particularly those carried out under P.L. 480.

Basic to such evaluation is the fact that agricultural surpluses are almost certain to exist in quantities sufficient to permit special export programs during the next several years—five years at least. Therefore the issue is not whether we should produce surpluses in order that we may use them in a P.L. 480 type program, but rather it is this, having surpluses available for use in special export programs, should we use them in this way?

My answer to this question is yes, we should use at least part of our surpluses in a P.L. 480 type program—provided we properly integrate such effort into the over-all foreign policy of the United States and into the economic development program of the recipient countries and provided we properly safeguard international commercial markets and avoid seriously impeding basic adjustments in the food-fiber sector of our own economy.

That we can do these things successfully has been quite adequately demonstrated by operations of P.L. 480 during the past four years, even though such operations leave much room for improvement. The need now is to build on the experience of the past to improve operations in the future. In doing this we should work with recipient countries pro-

gramming from three to five years ahead in order properly to relate our efforts to other forms of assistance and to country needs and development program. For such multi-year programming it is not essential that P.L. 480 be extended on a multi-year basis—merely that there be an appropriate declaration of policy, to be implemented by annual appropriations, following the precedent of the Marshall Plan.

From the standpoint of the United States, it is desirable that foreign surplus disposal be made an integral part of a comprehensive stepped-up effort to bring food-fiber supply and demand into balance by expanding commercial markets for U.S. agricultural products by improving the diet of the American people and by expanding export markets for dollars.

These efforts should have priority call on surplus stocks; thus making P.L. 480 a residual program—one that should decrease in volume as efforts succeed to expand commercial markets. In the event of real conflict between foreign policy and surplus disposal considerations, generally speaking the former should be given priority over the latter—particularly when the disposal effort might weaken the U.S. role in world affairs. P.L. 480 must not be regarded as a cure-all for the total U.S. farm surplus problem. At best it is but a partial answer.

From the standpoint of the recipient country it is important that P.L. 480 be integrated with such country's own development program in a manner that will avoid retarding the development of agricultural resources in the country, either by reducing the price incentive to local growers or by delaying investments in the agribusiness sector and will utilize local currencies to stimulate and accelerate the rate of progress in lagging phases of the development program—particularly in the private sector and in essential services, such as education, roads, communication, and the development of grades and standards. Services such as education might be aided through funds administered by a joint American-local country foundation governed by a policy board composed of outstanding private citizens of the two countries.

On balance, the P.L. 480 program must be regarded as a mixture of surplus disposal and foreign aid. Of itself, it is only a partial answer to problems on either front. If carelessly used, it could create more problems than it solves. On the other hand, if properly used, it can work to the mutual benefit of the U.S. and co-operating countries.

Assuming that a U.S. foreign agricultural disposal program is both well planned and well executed, then its ultimate value as an instrument of foreign aid will depend on the soundness of the over-all foreign assistance effort of which it becomes an integral part and the adequacy and effectiveness of the total development program to which it is geared within the co-operating country.

DISCUSSION

BORIS C. SWERLING: A program that supplies surplus American food to the world's poor, while promising to accelerate economic advancement abroad, makes a strong appeal to our hopes and to our sense of common humanity. It therefore becomes increasingly difficult to act the critic or the skeptic without appearing to violate the canons of good taste or the dictates of practical politics. Professor John H. Davis' views on the constructive international purposes to be served by selling our agricultural surpluses for foreign currencies under Title I of Public Law 480 must nevertheless be subjected to the critical processes of weighing conflicting evidence, distinguishing valid generalizations from official or unofficial rationalizations, and disclosing unobtrusive side effects.

The Food and Agriculture Organization, in its study on *Uses of Agricultural Surpluses to Finance Economic Development in Underdeveloped Countries* (1955), emphasized a particular pattern of timing. Heavy investment in development projects would necessarily generate powerful inflationary forces; specially financed food and fiber imports might soak up consumer purchasing power and incidentally relieve strain on the balance of payments. P.L. 480 sets this sequence in reverse. Importation of commodities, proceeding far more rapidly than use of foreign currencies, represents a real addition to national resources and provides some immediate restraint on the inflationary process; but upward pressure on prices will be accentuated at such times as the acquired local currencies are actually spent, when they will result in new demand for imported foodstuffs and capital goods alike. One may ascribe incidental advantages to expenditures of the foreign currency pools; but typically the foreign currencies are of maximum local advantage while held as idle balances. Debt repayment, it will be recalled, was a significant outlet for counterpart funds generated under the Marshall Plan.

Under present practices, continuing shipments of expendable U.S. commodities are being converted into substantial long-term claims against foreign economic resources. Both the U.S. and the importing country are more eager to move the goods under sales agreements than to negotiate subsequent loan agreements. But pools of local currencies, rising at compound rates in keeping with annual export shipments and prospective loan repayment schedules, are likely to become increasingly embarrassing to both parties. Even if all problems of reverse capital transfer are avoided, how soon will those currency holdings reach levels that recipient countries regard as intolerable financial penetration of their domestic economy? Statutory provisions like the Cooley amendment hardly improve these political prospects. There is also the unfortunate fact that many congressmen look upon local currencies as a direct substitute for dollar aid, which they certainly are not.

The continuing struggle with the Soviet Union is put too often in terms of relative destructive capacity or comparative rates of economic growth. Particularly in dealings with the underdeveloped world, what is under test is the

viability and flexibility of the liberal institutions of Western civilization. Title I transactions provide a thoroughly shabby demonstration of the virtues of the market system. The very terms "sales" for foreign currency and economic development "loans" are a mockery of the kind of commercial market relationship we presumably seek to foster and which in these instances simply does not exist. Surely it is preferable to make grants now than to invite repudiation or cancellation of debts later. Professor Davis reiterates American confidence in the virtues of private enterprise; but the agricultural surpluses are in fact generated by an economic sector characterized by a higher degree of governmental intervention than would be rational in a completely socialist state. Although a readiness to effect necessary institutional changes is often a precondition of generating the process of economic growth abroad, the U.S. demonstrates its conspicuous inability to cast off a discredited agricultural policy or to hold federal price support expenditures within bounds. Recipient countries recognize that current levels of surpluses are an embarrassment to the U.S. and that antidumping statutes would be invoked against goods imported into the United States under comparable practices. Our trading relations should express the restraint and integrity of democratic processes. Instead, countries receiving Title I commodities become inured to a kind of ritualistic impropriety evidenced by such practices as tied sales of low-priority commodities; application of local currency to questionable or extrabudgetary purposes; and insistence that customary dollar expenditures abroad by the U.S. government be increasingly assigned to the purchase of U.S. agricultural produce. The device of reimbursing Commodity Credit Corporation at full cost rather than at export market value, thereby understating the Corporation's price support losses and protecting its capital position, provides a nice object lesson in fiscal legerdemain. Availability of P.L. 480 financing serves to reward a country that experiences balance-of-payments difficulties, whether these are due to accelerated economic development or not, and whether the food deficit is a temporary phenomenon or the symptom or a deep-rooted population problem.

How justified is the attempt to make an economic development duchess out of our bedraggled agricultural surpluses? Congressional consideration is by committees heavily biased in agriculture's favor, and powerful spokesmen support local-currency sales or barter while arguing for cutbacks in other programs labeled "giveaways." The 1958 extension of P.L. 480 was sidetracked in the House of Representatives until favorable treatment was assured for a dubious price support measure. Leadership in Title I programs lies with the aggressive marketeers of the U.S. Department of Agriculture, not with agencies bearing a primary responsibility for foreign relations. If the American interest in promoting economic development abroad is as important as many of us believe it to be, the case must be made for a foreign aid program that supplies a commodity-mix more in keeping with the development needs of recipient countries.

Foreign currency sales are more appropriately placed in the context of commercial policy than of economic development. The movement toward a

more liberal international trading system has been restrained by gaping exemptions to agricultural imports under the terms of GATT. But the deterioration in export practices has been particularly discouraging. Although P.L. 480 has been in operation only since 1954, it is the successor in a line of special programs that have financed about 1.5 billion dollars of agricultural exports annually for the last decade and a half, quite apart from those commodities moved with the assistance of various subsidies. After some 7 billion dollars of P.L. 480 programming, the price support investment of Commodity Credit Corporation stands higher than when the legislation was originally enacted. Special disposals, which contributed immeasurably to postwar rehabilitation and recovery, are tending to become a permanent crutch for agricultural exports. One cost is the undermining of farm-group interest in a more liberal trade policy—a particularly serious matter among Southern Democrats, whose traditional support for freer trade is already being weakened by the region's emerging industrialization.

From the standpoint of impact on the international trading system, the analogy of the Nazi tactic of the thirties may be useful. The Germans, with their heavy need for basic imports, provided a market for primary producing countries at a time when alternative outlets were hard to come by. Foreign exporter countries, coming into possession of German marks, assumed a creditor status vis-à-vis Germany, and exchange controls became the means by which Germany dictated the terms and items upon which the funds could be spent. This was blatant bilateralism, and exercise of German bargaining power was at the expense of the country's trading partners. P.L. 480 provides almost the direct antithesis. It is the U.S. export surplus that generates the program; the foreign country becomes a debtor rather than a creditor; and the foreign trading partner, instead of being exploited, is the immediate beneficiary.

In the P.L. 480 case, the exercise of unequal bargaining power is at the expense of third countries that are alternative sources of the export commodities. It is a peculiarity of America's trading position that such exports as soybeans, cotton, tobacco, and rice compete directly with the export staples of less developed countries. Many nations are in a position similar to that of Pakistan—welcoming P.L. 480 wheat, suffering from our cotton policy, and being increasingly driven to bilateralism on both accounts. At the same time, our wheat export policies artificially support the price that underdeveloped countries must pay for the tonnage imported commercially. There have been strong Congressional moves to extend the Title I cloak to such manufactured agricultural commodities as cotton textiles, although in that event India would be grouped with the injured parties rather than among the beneficiaries.

U.S. commercial policy, expressed in overemphasis on shipping our agricultural surpluses compounded by ill-advised restrictions against commodity imports, places a heavy burden on the best-conceived program of foreign aid, weakens the Western Alliance, and has helped push several primary-producing countries into closer economic ties with the Soviet bloc. Meanwhile, broad principles of multilateral trading undergo a quiet erosion. Domestic political

pressures must be recognized, but frequently it is also important that they be resisted.

SAMUEL P. HAYES, JR.: Two problems suggested by the papers presented seem to me to deserve some elaboration. One problem concerns the nature of the activities undertaken with foreign aid funds and the other the way these activities are planned and administered.

First, what kinds of activities should be undertaken? As Mr. Wood pointed out, "we are dealing here not merely, and not even primarily, with an economic problem but with the organization and functioning of societies in all phases of their existence." In his statement of the goals sought, he referred to the need to develop "enough dynamism" within other societies to provide the drive for their own further progress. We are, in other words, concerned not with economics alone, but with psychology, sociology, cultural anthropology, and political science; not simply with the resources needed to make growth possible, but also with the human elements involved in taking full advantage of those resources.

My first problem, then, is: What should the foreign aid program be doing to help bring about the psychological and sociological changes which are necessary to get under way a self-sustaining process of economic growth; or, if such a process is already under way, to step up its pace? We should, of course, distinguish between changes which simply bring about a higher per capita income permitting higher per capita consumption, and changes which launch a continuing process of change—a chain of changes. It is the latter that should be of most interest to the foreign aid program.

What kinds of psychological or sociological changes appear to be related to continuing economic growth? Research has not gone nearly far enough in this field, but the following two attitudinal changes are examples of psychological concomitants of economic growth.

Economic growth appears to be correlated with an increase in the number of people who believe that economic and social advancement can be obtained by individual competence and effort rather than through preference based on kinship, social status, political favor, bribery, or other criteria not tied to individual performance on the job. Individualism can perhaps be overdone, but most underdeveloped countries at present need more of it.

Again, economic progress appears to be correlated with an increase in respect for manual labor, respect for business and other economic occupations, respect for economic prowess, and with decreasing respect for customs (such as religious taboos and wasteful consumption) which act as barriers to economic innovation and activity.

There are plainly two sides to the coin involved in social change. On one side is the individual, with his personal information, beliefs, attitudes, expectations, and values. This psychological side of the coin represents the dynamic of desire in a given society.

The other side of the coin is the social context within which the individual acts and develops. The social context includes the formal and informal cus-

toms, laws, institutions, organizations, and other social relationships that so greatly determine not only what an individual desires to do but the opportunities afforded him to do it. This other side of the coin then represents the frame of freedom or constraint within which the individual acts.

For example, establishment of a merit system for selection and promotion in a career civil service both stimulates individual initiative and provides rewards for superior individual performance. An organization that puts a foreign-trained employee in a supervisory or training position rather than boxing him off (as frequently happens) reaps full advantage from the foreign training, as well as establishing technological change as a positive value for many of its other personnel.

Every change involves both sides of this coin—both the social framework and the attitudes and motives of the individuals who act within it. Two steps are necessary to find the solution to this first problem—the problem of using foreign aid most effectively to maximize self-sustaining growth.

The first step is to determine what changes, including these psychological and sociological changes, are in fact to be sought in a particular nation—and this is something that requires study and decision within that nation, of course. Changes of these kinds are measurable.

The second step is to determine what kinds of feasible foreign aided activities will help most in bringing about the needed changes. There have already been many studies of learning, cultural diffusion, communication, and planned change that bear on these areas of action. Much more study is needed, particularly to find out whether the principles of change induced from past studies are applicable in the particular society being aided. And the changes associated with specific projects already undertaken should be measured.

When we know more clearly what changes need to take place in the less developed countries, and when we know better how these changes can be brought about, we can design new projects to maximize these changes. And we will have much better criteria for judging new projects and for evaluating existing ones. The problem at present is in major part one of inadequate knowledge. It is also, I believe, one of inadequate application of what is already known.

Other speakers have emphasized the importance of financial, administrative, and political factors in foreign aid. It is obvious that enough money, an effective organization, and political agreement are necessary conditions for our foreign aid program to achieve its objectives. But they are not sufficient conditions to bring about or maintain a self-sustaining process of change and growth. In fact, they may well be sterile unless backed up by a suitable dynamic of desire, acting within a frame of freedom.

The second problem suggested by the three principal papers concerns the way in which foreign aid is carried out. This problem arises from the fact that certain conditions exist in the foreign aid situation that tend to foster external domination of decision making. As a result of these conditions, many decisions are made of kinds and at a tempo that do not give proper weight to the interests and desires of the host country. And the ever present possibility

of major unilateral decisions, such as to impose new conditions or even to terminate aid, make for a very unhealthy atmosphere in which to develop any genuine co-operation. Dr. Thorp called attention to this general problem before this Association, when it met in this city eight years ago. His discussion drew heavily on experience in Europe. Since then, we have learned from further experience in underdeveloped areas how numerous and influential are the conditions that tend to bring about such external domination in decision making. These conditions include:

First, the ethnocentrism of many experts and aid officials from Western countries. They know only their own culture, and give weight only to their own value system. (This goes for economists, too, who have given little thought to the consequences for economic policy of long-continued and heavy unemployment and underemployment.)

Second, the frequent perception by Americans of aid as a kind of charity; and the equally erroneous conception of foreign aid as a program to win for America the minds of men rather than as a program to spark growth. Either conception militates against equality of consideration for host country desires.

Third, the change-mindedness of Western experts and officials. They can only justify their roles if they propose change.

Fourth, the imbalance in number, training, and experience as between the foreign experts and the nationals of co-operating countries. If you get there "fustest with the mostest" experts, the decisions made are likely to reflect this fact.

Fifth, vested economic interests in the aiding countries. Cotton and cattle interests, for example, have not been wholly without influence in the American program of foreign aid.

Sixth, the American budgetary process, coupled with Congressional suspicion of the executive branch (no matter which party controls either). The deadlines demanded by annual budget making and the detailed plans required by Congress both operate to force Americans to rush their counterparts in other countries to premature decisions. Mr. Cleveland has mentioned the overcentralization of decision making in Washington, which is also a major factor in producing one-sided decisions.

Seventh, the American urge to see early results. Nationals of other governments often want quick results, too. But sometimes they are not in as much of a hurry as the Americans who think in terms of "impact."

Eighth—perhaps most important of all—the feeling on both sides that "he who pays the piper may call the tune." As both Mr. Davis and Mr. Cleveland point out, a great deal of influence reposes in the hands that distribute either dollar aid or the local currency funds now accumulated in these countries. This influence easily evolves into domination.

Several of the suggestions made in the three papers bear on this problem—and it is a very serious problem. Mr. Davis suggests more use of binational foundations to control the use of local currency funds generated by sales of American surplus commodities. Mr. Cleveland suggests more reliance on international agencies and more decentralization to the field missions of decision

making, particularly on individual projects. Mr. Wood points out the great need for training top managerial personnel in the co-operating countries.

All these would help. Much more needs to be done, however. Most fundamental is the recognition by the American people and the Congress that our foreign aid is primarily an instrument of foreign policy directed toward goals of direct interest to the United States. These goals of ours are—at least in the immediate future—the growth and strengthening of the economies and societies and the responsible political functioning of the co-operating nations. We are not trying to organize a pro-American political apparatus in these countries to counter local Communist parties. We are not being simply charitable. We are not trying to buy the minds of men.

Beyond clarification and agreement on purposes, there are other changes that would reduce foreign domination of development decision making, in addition to those suggested in the papers under review. These changes may be summarized as follows: (1) More projects of several years' duration, not requiring annual Congressional approval. (2) Better staffed national development planning boards and more well-thought-out development plans in co-operating nations. (3) More use of joint mechanisms in developing plans for participation of foreign agencies in development—these joint mechanisms involving American, United Nations, and other external agencies, together with the host nation. Such joint mechanisms might involve development in a single nation or in a whole region. (4) Better selection and orientation of American (and other Western) personnel to equip them to work more effectively with the nationals of co-operating countries. (5) Better selection and orientation of host country personnel to equip them to work more effectively with experts and officials made available by foreign aid agencies. This is a point not often stressed, but nevertheless important.

It is natural, as Mr. Wood points out, that foreign aid agencies wish to make sure that their aid is not wasted; in fact, that it makes the greatest possible contribution to mutually agreed objectives. Yet this inevitably draws the aiding organization into the most delicate internal political, economic, and social questions. The dangers inherent in this situation are so great that everything that can be done on either side should be done to bring about a more equal partnership in making these decisions. Otherwise, the most intelligently developed plans for aiding development abroad may yield far less progress than even our realistic expectations now permit us to hope for.

RICHARD S. ECKAUS: Each of the three papers presented is a more than adequate summary of foreign aid problems or of some particular aspect of the United States foreign aid program. I am in general agreement with the views expressed by Messrs. Cleveland, Davis, and Wood with respect to the significance of the U.S. aid program. Just because of this I shall not quibble about particular points in these papers with which I do not fully agree.

As my contribution to this session I should like to offer two synthetic principles which, I believe, may include many of the specific issues raised in these papers.

Underlying the U.S. foreign aid program is some set of ideas which are used to explain the process of economic development and to provide a rationale for economic aid. These ideas have come from many sources including the folklore of our own and Western European economic development and the attempts of professional economists to understand that development. Unfortunately these ideas have not always proved accurate nor have they always been mutually consistent.

In recent years there has been increasing interest in economic growth at all periods of history and the present and many attempts by economists to provide a general theory of economic development. The first principle which I should like to suggest now is not a new theory of development, but I believe that it should be part of any theory of development. I shall call this the principle of alternatives. This is, briefly, that there are many paths to economic development. It is not that any road a country travels will lead it into growth and development. It is that there has been and will continue to be considerable variety in the forms, the organization, and the process of development in different countries.

I am not arguing that general theoretical analysis of economic growth is fruitless. Rather, I believe that in the construction and application of economic theories as a basis for interpretation and advice in actual situations there must be recognition of the unique character of each area's economic processes. In fact, this itself is a rigorous theoretical conclusion as well as one which can be based on observation. The variety of historical experiences, the differences in available technologies, in population pressures, and in social behavior patterns—all point to the principle of alternatives.

One point made in the three papers stands as an important corollary of this first principle: a foreign aid program must contain enough internal flexibility for accommodation to the variety of conditions to be found in underdeveloped areas.

Let me give an example. One of the debates about foreign economic assistance has been whether aid should be granted on a project basis or a program basis. It seems from some things said that there is movement toward the program basis which I would regard as desirable. I submit that the attempt to give economic assistance project by project in underdeveloped areas reflects in part a narrow view of the process of economic development. It might have been true in the past and might still be true for some areas that their needs are so specific that they can be isolated in particular, unrelated projects. However, that is often not the case. Aid should be given on the basis of a program which takes into account the entire growth process of a country. In some cases this may mean it is as necessary to supply consumer goods to aid in development as in other cases it will be necessary to supply capital goods.

There are other illustrations of the principle of alternatives. Dean Cleveland remarked on the usefulness of a variety of arrangements for financing economic aid.

The second synthetic principle which I should like to offer is specifically concerned with foreign aid policy. This principle, which I owe to Professor

Rosenstein-Rodan, of the Center for International Studies, MIT, is the principle of continuity. It states, essentially, that an economic development aid program should, itself, provide for the continuity of effort necessary for successful development. It also states that such aid will be most efficiently used if countries receiving the aid can rely on its continuity in their planning.

This does not mean that an economic aid program should guarantee to fulfill whatever future applications for assistance are made. It does mean, first of all, that we must face up to the fact, as Mr. Wood has said, that economic aid to underdeveloped areas cannot be a short-term program. It also means that the aid which we do provide can be used more imaginatively and effectively by underdeveloped areas if it can be fitted into their own time horizons of effort. In the underdeveloped areas, these time horizons go on for many years.

I suggest that many of the specific problems of the U.S. aid program stem from lack of general acceptance of the principle of continuity. Congressional opinion and public opinion about foreign economic aid has not fully accepted this principle even though our economic aid has gone on and on. The aid program has appeared as a series of annual crises which only recently seem to abate somewhat. Problems of recruitment of personnel, financing, and planning similarly stem from inadequate recognition of the principle of continuity.

ICA has made notable efforts to provide *de facto* continuity, as Dean Cleveland has put it, which have ameliorated internal problems. However, the continuity necessary to ameliorate external problems must come from Congress.

Finally, I should like to address a particular issue: soft currency loans to underdeveloped areas. These can be flexible forms of financial arrangements as has been pointed out. There has recently been serious discussion of a scheme originating with Senator Monroney for relending of repayments of such soft currency loans. It has been pointed out and should be emphasized that reloaning of the repayments made on soft currency loans would not make additional resources available to underdeveloped areas.

It is said, however, that perhaps additional resources might be made available through such a scheme if some Western European countries loaned their hard currencies. The widening of sources of aid to underdeveloped areas would, of course, be desirable. But it seems unnecessary to tie that development to a cumbersome scheme for disposing of the proceeds of soft currency loans which would inevitably be unsuccessful.

INTERNATIONAL TRADE AND PAYMENTS IN AN ERA OF COEXISTENCE

COMMERCIAL POLICY IN THE UNDERDEVELOPED COUNTRIES

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I. *Industrialization*

Historically, the spread of technical progress has been uneven, and this has contributed to the division of the world economy into industrial centers and peripheral countries engaged in primary production, with consequent differences in income growth. We are now at a transitional stage, in which this division is being gradually weakened, but it may take rather a long time to disappear. As the spread of technical progress into the periphery—limited originally to exports of primary commodities and related activities—is advancing more and more into other sectors, it brings with it the need for industrialization.

Indeed, industrialization is an inescapable part of the process of change accompanying a gradual improvement in per capita income. In response to differences in the income elasticities of demand and in rates of increase in productivity, the active population is tending to shift—chiefly through the distribution of its increment—from occupations with a relatively low income elasticity of demand—principally primary production—to industry and other activities where this is relatively high.

This process has characterized the development of the industrial centers and is now advancing into the periphery. Industrialization of the centers is not a matter of dispute: it seems quite obvious that industrial countries should continue to industrialize. On the other hand, industrialization of the periphery has always been a controversial subject, not only in the centers, but also in the peripheral countries themselves. Although the opposition is receding, there are still some who consider industrialization to be a harmful diversion of productive resources from primary activities. Those who promote industrialization

* I am indebted for valuable criticism and constructive suggestions to: Professor Hollis B. Chenery, Stanford University, and to my Deputy at the Economic Commission for Latin America, Mr. Louis N. Swenson, as well as to Dr. Hans Singer and Mr. Sidney Dell, of the United Nations Department of Economic and Social Affairs. I am further pleased to place on record here the coincidence of ideas of this paper with the main lines of argument in Dr. Singer's paper on "Industrialization—The Other Side of the Coin," presented at the recent ECAFE Working Party on "The Role of Industrialization in Economic Development," which was received after this one had been written.

of the periphery are still credited with odd or ill-founded motives: the belief that industry makes nations weathy while agriculture is a source of poverty; animosity towards the countryside, reasons of prestige, or the desire to achieve self-sufficiency or to imitate the centers.

Let the peripheral countries increase productivity in their primary activities through much-needed technical progress and thus expand their exports. Their rate of development will then be accelerated on a sound basis. So runs the argument.

Technical progress in export activities of these peripheral countries has undoubtedly been a great stimulus to their growth. But if this process is extended to other primary activities for internal consumption, where productivity is usually very low, and industry is not developed to absorb redundant manpower, then the inevitable outcome will be more disguised unemployment or downright unemployment.

Thus the plea for technical advance in primary production as an alternative to industrialization in order to improve standards of living defeats its own purpose, as some of the fruits of such technical advance will usually be transferred from the peripheral countries to the outer world, unless it is buttressed by a vigorous process of industrialization and increasing productivity in industry. The greater the inelasticity of demand for peripheral exports, the larger the proportion of the fruits that is so transferred.

Industry and technical advance in primary production are thus complementary aspects of the same process. And in this process industry plays a dynamic role, not only in inducing technical progress in primary and other activities, but in the new attitudes fostered by industrial development.

As in the centers, industrial development at the periphery responds to the same disparities in income elasticity as regards internal demand; and in addition to that, to the effects of similar disparities in foreign trade. It is a well-established fact that the income elasticity of demand for imports of Latin American primary commodities by the centers is generally lower than the income elasticity of demand for Latin-American imports of industrial products from these centers. This difference is frequently accentuated by measures to protect primary commodities in the centers, whereas, as will be shown later, it is reduced by protection in peripheral countries, provided this is established between certain limits.

Let us take one instance: the case of Argentina. This country has followed the very mistaken policy of trying to stimulate industrialization to the detriment of agriculture, instead of promoting a balanced growth of both. In the recent ECLA study prepared at the request of

the Argentine government, we examined a series of measures that might considerably increase exports through mechanization and other technical advances in agriculture. But even so, exports would only grow at the rate of 1.1 for every 1 per cent of growth of income, while the demand for imports was estimated with a coefficient of income-elasticity of 1.4 per cent, given the projected rate of income growth up to 1967 as compared with 1955. Similarly high elasticities for imports have been found in ECLA's studies for Brazil, Mexico, Colombia, and Peru.

In other words, in addition to the need for industrialization arising from the internal growth of Argentine income, there is the further need, because of the disparities between exports and imports just described, for substituting domestic production for imports of industrial goods.

The other aspect of this process is to be found in manpower figures. Indeed, the active population employed in agriculture in Argentina in 1955 represented 26 per cent of the total. Although this is rather a low figure for Latin America and exports are supposed to grow at a very high rate, we have estimated that, in the period considered, due to technical progress only about 10 per cent of the increment of active population will be absorbed in agriculture, whereas industry will have to absorb some 47 per cent of it.

Import substitution (defined here as an increase in the proportion of goods that is supplied from domestic sources and not necessarily as a reduction in the ratio of imports to total income) is the only way to correct the effects on peripheral growth of disparities in foreign trade elasticity. Let us take a numerical example to clarify this aspect of our problem. For the sake of simplicity, we shall assume that there is only one center and a periphery, having equal rates of population growth. Assuming that the center's rate of income growth is 3 per cent yearly and the income elasticity of demand for imports of primary commodities is 0.80 and that there is no import substitution, then the rate of growth of these imports will be 2.40 per cent (3 per cent × 0.80 per cent) per year.

Suppose now that at the periphery income elasticity of demand for industrial goods from the center is 1.30. If, in a balanced development process, the rate of growth of these imports is to be no higher than that of exports, then peripheral income cannot increase faster than 1.84 per cent per year. This is the rate which, combined with that coefficient of elasticity, gives the limit of import growth—that is to say a rate of 2.40 per cent, the same as that for exports.

Should peripheral income grow at a rate, say, similar to the 3 per cent of the center, its demands for imports of industrial products would grow at the rate of 3.90 per cent (3 per cent × 1.3 per cent) while ex-

ports of primary commodities would increase at the rate of only 2.40 per cent. To bridge the gap between these two rates, either the rate of increase of demand for imports would have to fall by 1.50 per cent, by means of import substitution, or industrial exports would have to be added to the primary ones, or a combination of the two.

We have assumed the same rates of population growth at the center and periphery. If the rate is higher at the latter, as is the case in Latin America, industrialization has to be intensified in order to have the same per capita rate of income growth as the center. This is particularly necessary if the present differences in per capita income are to be gradually narrowed down.

We have seen that import substitution tends to correct the disparity in income elasticities of demand for imports and for exports. This does not mean that industrialization is not necessary in the exceptional cases—at least in Latin America—where there is no such disparity. It has been shown that industrialization also responds to internal disparities of demand. If exports of a particular country grow faster than its demand for imports, industry will still have to grow, but its contribution towards meeting total demand for industrial goods will decline while that of imports will increase. By contrast, when demand for imports tends to grow at a faster rate than exports, import substitution is necessary to correct this disparity, and then imports constitute a declining proportion of total demand for industrial goods.

On the other hand, a country whose exports grow at a very fast rate and constitute a relatively high component of its aggregate product is in a better position than others to accelerate its rate of economic growth; but this acceleration may induce a rate of increase in the demand for imports higher than the increase in exports, requiring import substitution to correct the disparity.

The acceleration of the rate of growth will be the more necessary if exports absorb only a small fraction of the increment of population. This is the peculiar case of Venezuela, where fast growing oil exports constitute 32 per cent of its total product, whereas they employ only 2.6 per cent of the total active population.

II. *Protection*

In the changing pattern of employment associated with the process of development, a declining proportion of the continuously increasing active population is needed for the growth of existing activities for the internal market, due to improvements in productivity. Therefore a part of the growing manpower is not required in these existing activities. Moreover, there is manpower that for the same reason is not needed to produce the present level of exports. All this redundant manpower has

to be employed in the expansion of these exports and in new branches of industries for substitution purposes, as well as in other new activities. These new forms of employment are geared to internal and external demand elasticities and to different rates of increase in productivity.

In other words, in a dynamic economy redundant manpower is continually emerging as a result of technical progress, and it tends to be absorbed to meet the increasing demand generated by that very same technical progress.

In addition, there is a second form of manpower that has to be so absorbed. There are indeed vast numbers of marginal workers of low productivity rendering poorly paid personal services, as well as people engaged in other forms of precarious employment or disguised unemployment of a precapitalist character who should be moved to new jobs.

In the process of growth, at every level of per capita income, a certain proportion of this manpower is made available for transfer to other forms of employment, through shifts in demand as well as through technical changes in production.

For the sake of brevity, we will use the term "surplus manpower" to describe both these sources of labor and we will confine ourselves to that part of the surplus to be transferred to exports or new branches of industry for import substitution.

Redundant manpower as such does not produce any income and the real measure of the fruits of technical progress is the increment that accrues to the community when such manpower is transferred to new forms of employment. In addition to this increment, there is the net increase in income obtained by transferring available manpower from these precapitalist forms of employment of very low productivity to exports or industrial activities of much higher productivity.

Let us first clarify one important point. Industrial costs higher than import prices do not necessarily mean that an industry is not economic for a country as is sometimes assumed.[1] Of course the smaller the difference the better.

The problem has to be considered from another angle. It is not really a question of comparing industrial costs with import prices but of comparing the increment of income obtained in the expansion of industry with that which could have been obtained in export activities had the same productive resources been employed there.

I am afraid that it is not possible to arrive at the optimum solution of this problem if market forces are left unrestricted. The classical mechanism of the free play of market forces, either in its original form of wage adjustments or in its contemporary version of price adjustments

[1] This was the assumption made by the Currie Mission on the iron and steel industry in Colombia, in the report presented to the International Bank some years ago.

through exchange rate movements, does not bring about that optimum solution. On the contrary, the periphery transfers to the outer world a greater part of the fruits of increased productivity than if the market forces had been contained at a certain point, either through customs protection or some other form of interference in the process.

Let us see briefly how exchange depreciation would work. Depreciation itself is considered as an outcome of market forces. If disparities in elasticities cause the demand for imports to grow faster than exports, let the exchange rate depreciate and find its own equilibrium level, when the surplus manpower will be fully absorbed.

As regards the absorption of manpower in exports, internal price increases due to exchange depreciation will bring higher profits and stimulate expanded production and exports. It is conceivable that this increase in exports could happen without any, or only a very small, decline in external prices. This, however, would mean a very high elasticity for export demand, which is quite unrealistic in the light of Latin-American experience. Income elasticity is generally low and so is price elasticity. Consequently, only a part—and not a very large one—of the surplus manpower can be employed in exports at given prices, and beyond that limit prices decline.

On the other hand, higher import prices will now make attractive those new branches of industries which were not so before because their costs were higher than import prices.

In this process, competitive equilibrium will be reached at a point where returns for export producers will equalize those for these new industries. However, this is not the optimum point for the periphery. Indeed, the marginal increment of income, arising out of successive increments of employment in export activities, has been falling faster than prices. And it can be demonstrated (see appendix) that, at the equilibrium point, except in very extreme cases, the marginal increment of income in those activities is lower than in industrial ones. It may even be negative if elasticity is very low.

Therefore, the optimum solution is attained before competitive equilibrium at a point where marginal increments are the same in both activities. In other words, the maximum gain for the periphery as a whole falls short of the equilibrium position where marginal costs and marginal revenues are equated.

The best solution for the periphery would be to stop the increase of exports beyond that optimum point of maximum gain. Some advocates of exchange rate adjustment to correct the disparity in foreign trade elasticities recommend that an export tax be imposed, high enough to deprive exporters of the profit incentive for continuing to expand production.

By and large, an export tax of this kind means a clear interference with market forces and acts in the same way as a protective duty on imports. If this import duty is levied at the optimum point, where marginal increments of income are equal, it will divert manpower to industrial activities and hence curtail employment in exports, just as the export tax does. (Throughout this process I have assumed constant costs, in order to avoid unnecessary complication.)

Again, if an export tax has an effect similar to protection, I have strong doubts about the advisability of exchange rate adjustments as an instrument to correct foreign trade disparities in demand elasticities. The main appeal of depreciation as compared with protection is that it leaves private initiative rather than government agencies to decide which branches of industry will be profitable substitutes for imports. But this could also be achieved through a uniform protective duty.

Protection (or subsidies) seems a more direct and simple solution, as it limits the adjustment to those new branches of industries that should be developed within a given period of time. To obtain the same result, depreciation forces the adjustment of the whole price system. In my view, a policy of depreciation or devaluation should be used only to correct an externally overvalued currency and not as an instrument for effecting structural changes in the economy.[3] A selective protection policy is a preferable instrument, notwithstanding the obstacles that have to be overcome in practice; and if it is applied gradually, higher import prices, affecting a relatively small proportion of imports each time, could be absorbed by general increments of productivity without affecting the price level of the entire economy, provided that protection has not been exaggerated to shelter inefficiency.

In any event, this is not relevant to our main line of argument. What is highly relevant is that the cost of spontaneous industrialization—by the unrestricted play of market forces through exchange depreciation—is a transfer abroad of part of the increment in real income derived from the employment of the surplus manpower, and that this transfer could be reduced or avoided by protection, subsidies, an export tax, or other forms of interference.

We have explained before that this increment of income represented the fruits of increased productivity. Therefore, the periphery transfers part of these fruits through the unrestricted play of market forces, in order to employ the surplus manpower whenever exports must increase beyond the limit at which external prices remain constant.

The classical mechanism in its original form of wage adjustment works, in the last instance, in the same way as its new version of ex-

[3] The difference is really between present and future equilibrium prices.

change rate depreciation. In both cases the level of wages in foreign currency has to drop in order to bring industrial costs down to a level competitive with imports, both expressed in foreign currency.

Setting aside other aspects of the classical mechanism, it is essentially the pressure of the surplus manpower which in this mechanism forces the fall in wages (in domestic as well as foreign currency, since it is assumed that there is monetary stability). This fall makes new industries attractive and stimulates exports, with the consequent price decline. All this is based on quite unrealistic assumptions concerning labor mobility and willingness to accept nominal wage reductions, whereas the mechanism of exchange depreciation does not require these assumptions. As a result of depreciation, the level of wages falls in foreign currency and, at the same time, this is accompanied by the fall of external prices. This is compatible with imperfect labor mobility and different levels of wages, and so is more realistic than the old classical mechanism.

Wage reduction does not mean a corresponding fall in real wages. In the classical mechanism the nominal fall is supposed to be largely offset by the fall in the level of prices, except in new branches of industry where costs are higher than import prices.

In the depreciation version, the level of real wages is restored through wage adjustments compensating for the effect of higher import prices on the cost of living. Of course, since imports constitute merely a fraction of the cost of living, wages need to increase less than import prices do. If in the process of adjustment wages rise more than the cost of living, the protective effects of depreciation are lost and a new depreciation might then be necessary.

In other words, internally there is no change except that real costs in new branches of industry will be higher than in existing ones. But externally the fall of wages in export activities, as a counterpart to the fall in prices (both in foreign currency), reflects the process of transfer of real income through the deterioration in the terms of trade.

In order to clarify this transfer process, we have to introduce concepts of the physical productivity ratio (henceforth called the "productivity ratio") and wage ratio. The productivity ratio expresses the relationship of physical productivity per man between the periphery and the center. There is a wide range of such ratios. For instance, exports of primary commodities at the periphery may have a range of, say, from 3 times the productivity at the center to only 0.50; and these exports of less relative productivity will be made if the level of wages is proportionately lower. So if the level is only half that at the centers, those export activities having only half the productivity of the center will be

developed; while those having a higher productivity ratio will tend to transfer part of the difference to the center through the free play of market forces. (To avoid complications, I have not included land rental, since it cannot be transferred.)

There is a similar range of industrial productivity ratios. Industries having a ratio of 0.50 or higher at the periphery could develop without protection, but those having less, say 0.40, would need it. We have seen that if these marginal industries are necessary for the full employment of the surplus manpower, the free play of the market forces will bring a wage deterioration, in terms of foreign currency, so far as this is necessary to offset the lower productivity ratio as compared with export activities (another way of expressing costs higher than import prices). Thus, to make marginal industries competitive, wages in foreign currency must decline so as to reduce the wage ratio from 0.50 to 0.40 and this process is accompanied by the decline of export prices. This is the case of transfer of real income that we have seen before.

Let us take now the other case. Let us assume that technical progress in exports advances in such a way that the productivity ratio of marginal export activities is increased from 0.50 to 0.70, without any increase in the industrial productivity ratio, which is also 0.50 at the margin. In this case, also, it will be the differential productivity of exports in relation to industry which tends to be transferred.

We may simplify the two cases in a broad generalization: Whenever the productivity ratio in exports is higher than in the marginal industries needed to employ the full surplus manpower, the real income corresponding to the difference in productivity will tend to be transferred abroad in the unrestricted play of market forces. This occurs either when the surplus manpower has to be employed in industrial branches where the productivity ratio is lower than in exports of primary commodities, or when the latter improves faster than does the ratio of industrial productivity. Therefore, it would be a very mistaken policy to advocate technical progress in primary activities without a parallel policy of industrialization. The higher the technical progress in those activities, the greater is the surplus of manpower. If this surplus is absorbed only in relatively small proportions by export activities—as is usually the case—industrial development is even more necessary because, as we have seen before, without it the fruits of technical progress in primary activities will be lost wholly or in part. We have also seen that to a certain extent this transfer is avoided by protection. But protection by itself does not increase productivity. On the contrary, if excessive, it tends to weaken the incentive to produce. Therefore, in order to maintain at the periphery the major fruits of technical progress in

primary activities and especially in exports, similar progress has to be made in industrial activities in order to improve their productivity and increase the level of wages in foreign currency. This will allow a parallel increase in wages for export activities; thus preventing a corresponding transfer of real income.

The need for technical progress in industrial activities has been duly emphasized in the infant industries argument. As productivity improves, protection may decrease until it is completely eliminated. This argument seems to overlook the need for helping exports to retain the fruits of technical progress. Indeed, if industrial productivity increases and wages do not rise proportionately, due to reduction or elimination of protection, exports will transfer their differential productivity.

Let us revert to our previous example to clarify this matter. If the productivity ratio in marginal exports is 0.50 and the wage ratio is the same and industries have to be developed with a productivity ratio of 0.40, then the difference must be offset by protection. Now, if technical progress at the periphery increases the productivity ratio of the marginal industries to 0.50, protection will no longer be needed. But then the wage ratio will continue to be 0.50. If, on the contrary, protection is maintained, the wage ratio will have increased in accordance with the productivity ratio and in this way, if exports also increase their productivity ratio, the periphery will retain the fruits of this increase up to the new level of wages.

Furthermore, when higher productivity is translated into higher wages rather than into lower protection, there is the additional advantage of forcing similar increases in productivity in other activities lagging behind. But all this requires a very cautious and selective policy of protection and does not conflict with the possibility and advisability of reducing and eventually eliminating protection in those industries having a faster rate of technical progress.

In all the reasoning of this section we have, for the sake of simplicity, considered a center and a periphery as a whole. But there are great differences between the centers. Secondary centers, as distinct from the main ones, may have some problems similar to those of the peripheral countries, when in order to fully employ their surplus manpower they have to engage in activities where costs are higher than import prices. This raises problems which, although interesting, are outside the scope of this paper.

On the other hand, there are also great differences between peripheral countries. A peripheral country might advantageously employ the whole increment of its manpower in increasing exports without industrialization, provided that too many others do not do the same. But we are

considering the general need of the peripheral countries for industrialization.

III. *Terms of Trade*

In the last instance, the pressure upon export prices and the corresponding tendency towards deterioration in the terms of trade in the peripheral process of growth subject to the unrestricted play of market forces is the result of disparities in income elasticity of demand and the uneven form in which technical progress has spread into the world economy, bringing very great disparities in technological densities. That is to say, the amount of technological knowledge as well as the real aptitude for using it in production.

Let us imagine a world without such disparities. In it we will not find any tendency to deterioration. Let us assume that there is a country A which is prevailingly industrial and a country B which is prevailingly primary. The wage rate is the same and trade is in equilibrium at a point where marginal productivity is the same in both countries. Then the productivity ratio at that margin is 1.0 and the wage ratio is the same. The productivity ratio is such that in A there is a full range of activities, principally industrial, where productivity is, say, up to three times as high as that of B. And in B there is another range of activities, principally primary, where productivity is also up to three times that of A. Therefore, there are no technological disparities. Neither are there any disparities of elasticities and the demand for goods is equally divided between primary commodities and industrial products. Finally, population and per capita income grow at the same rates in both countries.

Given these assumptions, there is no reason for a deterioration in the terms of trade working against primary production. Indeed, demand for primary products grows at the same pace as industrial demand, and consequently, the given increment of manpower at B does not need to be diverted from primary production, where the productivity ratio is favorable to B, to industry, where the productivity ratio is unfavorable for the same country.

Furthermore, as technological density is the same and productivity improves at the same rate in A and B, there is no differential productivity from this source to be transferred from the one country to the other.

Let us assume now that income elasticity of demand for industrial products is higher than for primary commodities, without any other change in the remaining assumptions.

If country B is unable or unwilling to send to A manpower which

would increase the latter's rate of industrialization, it has no other way out than to decrease the proportion of manpower in primary activities in favor of industry, through a different distribution of the increment than was formerly the case.

Here comes the important aspect. In B, manpower is transferred from primary occupations with a favorable productivity ratio to industrial occupations with an unfavorable ratio. Consequently the pressure of the surplus manpower will force employment down on the productivity ratio curve from 1.00 to say 0.80, with the wage ratio falling correspondingly at the new competitive equilibrium point. In the process of this adjustment to 0.80 of the wage ratio, export prices will fall, transferring income to country A. The contrary happens in country A. In response to a higher rate of industrial demand, manpower will flow from primary production to industry, where the productivity ratio is more favorable, thus improving the wage ratio.

Note that, according to our original assumption, the rate of increase of productivity is the same in both countries. Yet wages will increase less than productivity in the primary producing country due to the downward pressure of the surplus manpower, while they will increase more than productivity in the industrial country due to the pressure upwards.

This tendency to deterioration will be accentuated if, in addition to disparities in elasticity, we introduce disparities in technological densities. Suppose that in country B the export productivity ratio continues to be the same as in primary activities in our original assumption in relation to A but that the industrial productivity ratio is much lower than in the previous case. Thus in country B one of the important characteristics of a peripheral country appears.

It is obvious that if the industrial productivity ratio is more unfavorable than before, the level of wages has to drop more steeply in country B, hence increasing the transfer of real income to country A. Therefore, the combination of disparities in income elasticities of demand and in technological densities put the periphery in a weaker position vis-à-vis the center, as regards the terms of trade.

The center is in a better position to retain the fruits of its general increase in productivity because the increment in manpower does not need, as in the periphery, to press on occupations with a lower productivity ratio to the detriment of the wage level. In other words, general improvements in productivity tend to be fully reflected in the increment of the wage rate at the center, while at the periphery a part of the fruits of these improvements is transferred through the fall of export prices and the corresponding deterioration in the terms of trade.

In addition to this tendency, if productivity for export increases faster than marginal productivity of industry, then the fall of export prices will also tend to be more severe. The same may happen at the center, but the greater degree of technological homogeneity suggests that this phenomenon is likely to be less intense than at the periphery.

Furthermore, protection at the center gives additional force to the peripheral tendency towards a deterioration in the terms of trade. If there is free play of market forces at the center, some marginal primary activities there might disappear because of competition from increased peripheral exports at lower prices. But if these marginal activities are protected at the center, the possibility of increasing exports in the periphery will be less, and consequently a greater part of the surplus manpower will have to seek employment in industrial activities with a lower marginal productivity ratio, which would entail a further decrease of the wage level in foreign currency, with a further deterioration in the terms of trade.

This tendency of the terms of trade at the periphery to deteriorate in a process of spontaneous growth may be offset by compensatory forces in the free play of the market. One of these forces is of a Ricardian character. Even if wages deteriorate in foreign currency, the terms of trade may improve for the periphery if growing demand for some products prompts a resort to agricultural or mining land with lower returns. The other is connected with the center. Technical progress in some export activities at the center may advance faster than general productivity, resulting in a transfer of differential productivity of the same type as at the periphery although, probably, much less intense due to greater technological homogeneity at the center.

Interference with market forces may also counteract the tendency to deterioration. As we have explained, this is the effect of protective duties or export taxes. Combinations to restrict or eliminate competition in export activities may have similar effects, provided that not all of the profits are transferred abroad. Moreover, labor union action to increase wages in export activities may maintain the terms of trade, and, last but not least, international action to defend primary commodities may have this same effect.

On the other hand, a policy to reduce or eliminate primary protection at the center may, through the expansion of peripheral exports, absorb a greater part of the increment of manpower at the periphery, so alleviating the tendency towards deterioration of the terms of trade.

All this is very tentative but it offers a working hypothesis for inquiring into the past. A higher rate of increase of productivity in export than in domestic activities, coupled with a rather weak industrial-

ization process, may in the past have been powerful forces contributing to the deterioration in the terms of trade for some products. Further deterioration may occur in the future if efforts are concentrated on technical improvements in primary production without a vigorous development of industries and their technical advance, accompanied by a cautious policy of interference with the free play of international market forces to support the prices of important primary commodities.

IV. *Reciprocity*

Protection has different meanings in the peripheral countries and in the industrial centers. In the former it is, up to a certain point, the instrument for correcting the effects of the disparity in income elasticity of demand for exports of primary commodities and for imports of industrial goods and does not hamper the rate of growth of world trade. In the industrial centers, by contrast, protection of primary production accentuates this disparity and tends to depress peripheral development and to decrease the rate of growth of world trade.

The reduction or elimination of such protection at the centers has an implicit element of reciprocity, since the resultant increase in exports of primary commodities from the periphery will be followed by a corresponding increase in its imports of industrial goods, in response to their high income elasticity of demand, and there is no need for any reduction or elimination of duties to obtain this result.

The traditional form of reciprocity, under which peripheral countries are asked to grant duty concessions similar to those introduced by the centers, does not take into account this implicit element of reciprocity.

Moreover, these reciprocal duty concessions may have an unfavorable influence on the periphery's rate of growth. The development process requires a continual change in the composition of imports. These changes usually start with the decline in the proportion of imports of light consumer goods in favor of imports of basic material, capital goods, and durables. At more advanced stages of industrialization, when import substitution of these light consumer goods has been nearly completed, new changes relating to the other categories of goods are necessary, so that by reducing or eliminating imports of some of them it is possible to increase imports responding to the needs of the development process. Now, if these duty concessions interfere with these changes, then the increased peripheral capacity to import resulting from duty concessions at the centers instead of helping to attain a higher rate of growth might be accompanied by a real decline in the rate of industrial development. This might be a very harmful use of the increase in the periphery's capacity to import deriving from such

duty concessions at the centers. What is needed is a policy to encourage these changes in composition in order to accelerate the rate of economic growth, so that imports are adapted to the need for greater technical progress in primary production and for more intense industrial development.

I do not mean to suggest that existing duties and restrictions at the periphery should be untouchable. Far from it. Instead of the ideal of a rational and selective policy, there has frequently been shortsighted expediency and sheer improvisation. And in some cases indiscriminate or massive protection has gone far beyond the optimum point, to the serious detriment of exports and world trade. Therefore, although the periphery cannot influence the centers in a positive way, it may have a definite negative influence. The centers can actively stimulate the rate of growth of peripheral countries through trade and investment, but the latter cannot influence in a similar way the rate of growth of the centers and bring about any increase in their demand for primary products. However, if the periphery develops industry through protection beyond the optimum point, to the detriment of imports from the centers, this may have an unfavorable consequence on the center's rate of growth.

Under the conditions just described, protection at the periphery, instead of merely correcting disparities of income elasticity in relation to the centers, creates new disparities in the opposite sense and the centers are forced to adopt defensive protective measures to maintain their own rates of growth.

Of course, duty concessions granted by the centers afford a good opportunity of inducing peripheral countries to correct these anomalies. But much more is needed: a definite readjustment of commercial policy based on the clear recognition that, instead of trying to crystallize the existing pattern of peripheral imports, an effort should be made to help promote those changes in composition which are indispensable for fostering the rate of economic development.

All the foregoing requires a long-term outlook that may jeopardize short-term private trading interests. However, this would not be the first time that fundamental policy considerations have prevailed over those short-term interests, however legitimate they may be.

The centrally planned economies have, in this respect, a better means of adjusting their imports and exports to the needs of developing economies. And it is to be hoped that these countries, since they have long-term plans, will disclose projections of their probable demand for primary commodities, so as to enable producing countries to base their

policy decisions on sounder foundations than they have been able to do to date.

V. *Multilateral Trade*

Multilateral trade is the result not so much of adherence to a principle as of the trade policy of the most important countries. In this respect, the most significant behavior is that of the principal dynamic center of the world; that is to say, the center which because of its magnitude and technological progress has a greater influence on the rate of growth (as well as on the short-run fluctuations) of the other centers and of the periphery of world economy.

If the principal center, through the high level of its own imports, creates a great import capacity for its products in countries in the rest of the world, these countries may not only have a relatively high coefficient of imports (in relation to their income) from the center, but also from each other. World trade then constitutes a relatively high proportion of world income and multilateralism flourishes.

But if the principal center has a low level of imports, the countries in the rest of the world are forced to reduce their coefficient of imports from the center, and under the multilateral trade principle they are also forced to restrict imports from each other, as they cannot discriminate against the principal center.

Of course, every country, great or small, which has no disparities in foreign trade elasticities to correct and which resorts to protectionism has an unfavorable influence on world trade. But the greater the country the larger is its influence and the greater its responsibility.

Far-reaching changes have occurred in the pattern of world trade. In the nineteenth century, under the aegis of the United Kingdom as the world's principal dynamic center, trade developed at a very fast rate. The center's import coefficient was very high, which made it easy for the other countries of the world to have a high coefficient, too, not only with the center, but also with each other.

Moreover, the principal center's import coefficient increased continuously throughout almost the entire century, offsetting in the peripheral countries the effects of the lower income-demand elasticity for their primary commodities.

By contrast, the United States has always been a country of relatively low import coefficients, because of its natural resources and protectionist policy. Furthermore, this coefficient has been continually dropping. Nevertheless, at the time of British trade hegemony this decline had no apparent effects on world trade. Indeed, the extraordinary rate of growth of the United States economy tended to compensate for these effects, and its imports from the rest of the world grew at a very

fast pace. On the other hand, this rate of growth, so much higher than that of the rest of the world, considerably enhanced the relative importance of the United States in world economy, transforming it eventually into the principal dynamic center.

A principal center with a relatively low level of imports from the rest of the world in relation to the latter's income necessarily exerts a powerful influence on the pattern of world trade. This influence began to be felt as the rate of growth of the United States economy was gradually losing its nineteenth-century impetus, due to the decline in the rate of population increase, while at the same time this country was increasing its competitiveness on world markets.

This process reached a crisis with the great world depression. A further compression of the United States import coefficient and a rather lengthy pause in the growth of the economy have had a considerable impact on world trade and economy. And the world suffered considerable hardship in adapting to these events at the new dynamic center.

Bilateral trade emerged. It was a precarious and largely unsuccessful attempt to maintain trade among other countries, while imports from the United States were adjusted to the capacity to import. Multilateralism and the gold standard were destroyed and can only be restored—on a new basis—once structural changes in world trade and payments have been finally adapted to the new dynamic center with its very low import coefficient.

The long overdue formation of common markets in Europe—based on preferences—means that that inorganic bilateral reaction is being transformed into a rational policy of restricted multilateralism, with intense trade between its members and a coefficient of imports from the principal center geared to the capacity to import generated by it. Let us hope that the coefficient of imports from the rest of the world will not be unnecessarily forced down.

Destruction of world multilateralism and the decline in the relative importance of world trade has had serious consequences for the Latin-American countries. Their capacity to import is very low indeed in relation to their needs, given the present structure of production. This has been one of the major obstacles retarding the pace of industrial growth. Furthermore, it has forced countries to increase the proportion of domestic industrial production within total industrial demand through a more intense process of import substitution than would have been advisable under more favorable conditions of world trade.

On the other hand, this process of industrialization has been carried out without destroying the old pattern according to which each of the Latin-American countries is orientated in its trade towards the industrial centers, with very weak mutual trade. Trade between Latin-Amer-

can countries forms only 10 per cent of their total foreign trade, and industrial exports are relatively very small by contrast with countries such as Italy, Japan, and others with similar income levels. All this has resulted in the splitting of the industrialization process into as many watertight compartments as there are countries, without the advantages of specialization and the economies of scale.

The response to this should be the enlargement of national markets through the gradual establishment of a common market. But the common market, just as in Europe, cannot be established on the basis of the principle of universal multilateralism. Preferential treatment is needed inside the area to promote specialization in industrial products and primary commodities. European countries need preferences between them mainly to restore a pattern of very intensive mutual trade, which has been impaired in the way we have seen, whereas Latin America needs preferences to develop new forms of reciprocal trade, mainly in industrial products, that practically did not exist before.

Latin-American protectionism and preferences, if kept within reasonable limits inside a common market, will not hamper world trade. Imports from the centers will continue to depend on Latin-American exports to them—a clearly passive situation. The only changes—and these will be very important indeed—will take place in import composition, and through them countries will specialize in industrial products as well as agricultural ones. Without the common market, there will be a continued tendency by each country to try to produce everything—say from automobiles to machinery—under the sheltering wing of very high protection.

These are not the only considerations making the common market appear imperative. Paradoxically enough, the more advanced Latin-American countries are tending to become more externally vulnerable because of the form that industrialization has taken. In the process of import substitution, accentuated by adverse trade conditions, they have compressed their import requirements to a series of goods absolutely essential for the maintenance and growth of their economy and have lost the margin for the further reduction in imports which they had when they imported consumer goods. Thus an unfavorable fluctuation in exports tends to have critical effects on economic development far more so than when, as in former times, vulnerability was more on the demand side. The common market by diversifying trade within the area can gradually correct this situation. This is without detriment to the possibilities of developing industrial exports to countries outside the region that the common market may foster through the reduction of industrial costs.

The favorable attitude shown by the United States government, as

well as others, towards the formation of a Latin-American common market is most encouraging and may be a very important element in the framing of a commercial policy geared to the need for accelerating the rate of Latin-American development.

A vigorous policy of industrialization is required as an inevitable complement to technical progress in primary production. In this connection, the decisive support given by the United States government (through the Export-Import Bank) to the establishment of the iron and steel industry in some Latin-American countries is a noteworthy step in the right direction. Its significance lies in the fact that not only was a positive stand taken as regards heavy industry in the region, which has been and still is the subject of considerable controversy, but that financial and technical support were given to Latin-American entrepreneurs. While the contribution of foreign enterprises to development is highly valuable, it is essential for the promotion and consolidation of free enterprise to encourage the ability and initiative of the Latin-American entrepreneur as well.

Industrialization needs a dynamic policy of protection, which should be continually adapted so as to introduce new changes in import composition as the economy develops and disparities in the income elasticity of demand play their role. Trade treaties should not try to crystallize existing situations but should be flexible enough to promote these changes in import composition in an orderly, selective, and rational way.

As for the common market, there is no fixed blueprint. Help is needed within the GATT and other bodies to explore new paths in accordance with Latin-American conditions and potentialities.

In all the foregoing, there is ample room for new forms of reciprocity. Duty concessions by the centers, apart from their influence on a sound protection policy in Latin-American countries, may become a very useful instrument for inducing measures of trade liberalization and economic integration between these countries. And the gradual relaxation or elimination of the preference given to certain imports from the United States in some Latin-American countries may serve this purpose very effectively.

APPENDIX

Let us see how the process of spontaneous industrialization might operate according to the classical mechanism, assuming that there is free mobility of labor and unrestricted competition. We are concerned here only with the alternative employment of the surplus manpower in export production and industrial activities: for the sake of simplicity, other aspects will be overlooked. For this same reason, we have

resorted to a simplified diagram (Figure 1) in order to illustrate our point.

In this diagram, the surplus manpower to be employed in both activities over a given period of time is represented by the axis *OP*. Growth of income at the center and its income elasticity of demand

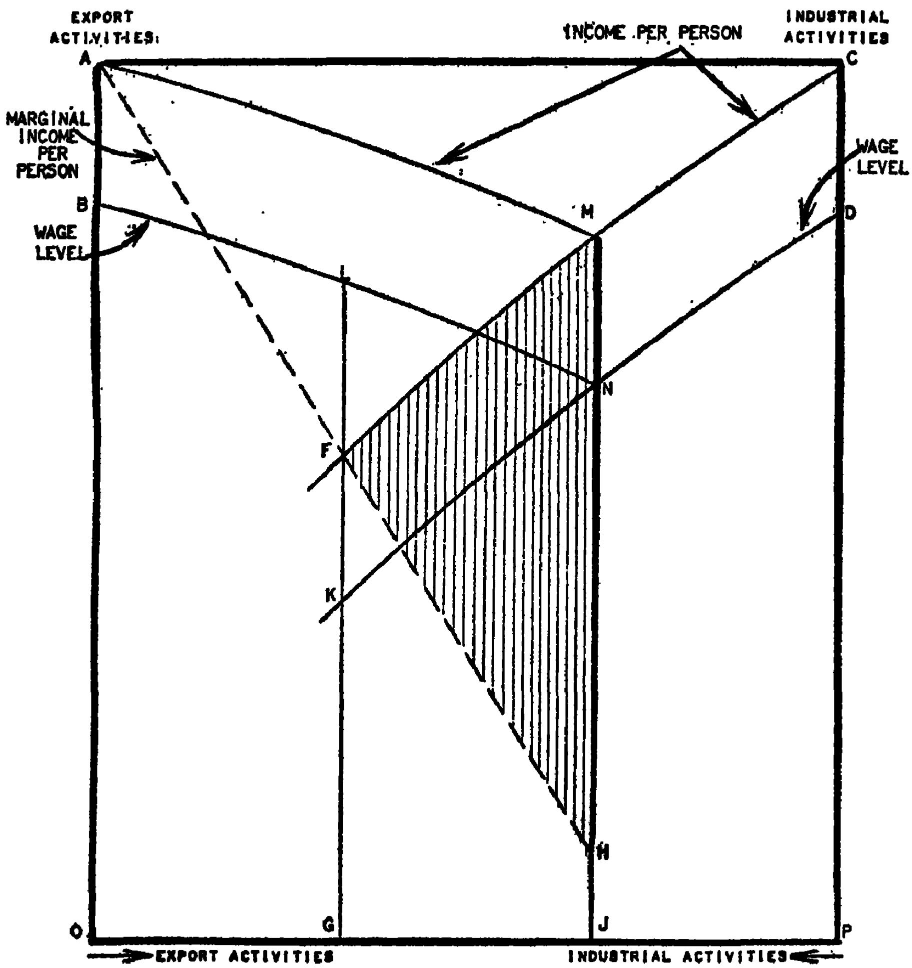


FIGURE 1

will determine up to what point additional production for export at the periphery could be sold at constant prices. This is assumed to be point *O*. From *O* towards *P*, beyond this point of constant prices, successive increments of employment are added to export activities; and in the opposite direction, from *P* towards *O*, successive increments of employ-

ment are added to industrial activities in new branches of production. Furthermore, we assume, for the time being, that real income per person employed in export activities, represented by *AO*, is the same as *CP* in industrial activities at the beginning of the process, and that real wages, *BO* and *DP*, respectively, are also the same.

As increments of employment are added in export activities beyond the point of constant prices, the fall in prices exerts a downward pressure on per capita income along the line *AM*, and wages accordingly decline in a parallel manner along the line *BN*. Constant unit profits have been assumed in order not to complicate our reasoning. Given the high mobility of labor, the decline of wages in exports permeates into industry.

Let us see what happens there. At point *P* industrial costs are competitive with import prices. But new branches of industry have costs higher than import prices and per capita income there is lower than at that point *P*. As wages fall, those branches with the smaller difference between cost and import prices will be first affected, followed by others with inferior productivity, measured by the decline of the curve *CF* of per capita income (corresponding to a declining productivity ratio with the center).

In this way, per capita income in export activities falls correspondingly with the decline in prices; the same thing happens in industrial activities due to higher costs of successive new branches of industry. *H* is an equilibrium point at which the surplus manpower is distributed between the two activities.

Meanwhile marginal income per person has been declining faster than income per person employed in export activities, along the line *AH;* and at the equilibrium point it is represented by *HJ*, which is much smaller than *NJ;* that is to say, marginal income in industrial activities. Indeed, after employment in export activities has proceeded beyond point *G*, marginal income per person in these activities has been lower than in industry.

Income per person employed in export activities is the result of successive increments of employment leading to constant increments of physical exports, at diminishing prices.

Marginal income per person, on the other hand, is the result of every addition of income per person to previous export income, less the transfer of part of this latter due to the fall of prices. It so happens that, while per capita income continually diminishes, that transfer of income to the outer world becomes steadily greater due to the fact that the fall in prices affects increasing aggregate physical exports.

In this way, marginal income declines faster than per capita income and may even be negative if, after a certain point, employment in ex-

port activities continues to augment, thus reducing instead of increasing the aggregate export income.

In industry, marginal income per person is the same as per capita income, from the point of view of the economy as a whole. Indeed, there is no such transfer of real income to the outer world as in the case of exports. The fall of wages has brought also a decline of prices in existing industries; but this involves a purely internal transfer, whereas in export activities there is an external loss of income which reduces the increment of income due to the employment of the surplus manpower.

This transfer could have been reduced if the surplus manpower in exports had been stopped at point *G*, where the marginal income per person from exports is equal to marginal income in industry. It is true that if employment in the latter had been extended from *J* to *G*, marginal income per person there (as well as per capita income) would have continued to decline, due to higher costs as compared with import prices. But even so, the aggregate marginal income thus generated by industry, represented by the area *FGJM*, is greater than that which would have been generated by exports, represented by the area *FGJH*, if employment increments had proceeded up to *J*. The difference between the two areas, *FHM*, is the net loss due to the spontaneous process of industrialization.

The optimum solution is to stop exports at point *F*, where their marginal income per person is the same as in industry. This is the point of maximum increment of real income derived from the employment of the surplus manpower; before or beyond that point, the increment will be less. However, at this point wages in exports, *GL*, are above the level that could make it attractive to invest in extending employment up to this point *G*. Therefore it would be necessary at this optimum point to levy import duties high enough to allow industry to pay the same level of wages as exports. In other branches to the right of *G*, which have better productivity, the need for protection would be less.

The real magnitude of the outward transfer of income depends chiefly on the income and price elasticities of demand for exports and the difference between internal costs of industrial production and import prices. The larger this difference and the lower the elasticities, the higher is the transfer of real income to the outer world.

We have assumed equality of income per person in exports and industry at the beginning of the process. To abandon this assumption does not modify our reasoning, except in cases where per capita income in exports and the price and income elasticity of demand of these are so high that marginal income per person is still greater than the rate of wages at the equilibrium point (*N*). It does not seem that this

case is typical in Latin America. It is true that in some mineral exports per capita income is relatively high, due to a great proportion of land rent, but elasticities are not high and furthermore these activities absorb only a relatively small part of manpower; thus employment of a substantial proportion of its increment in increasing exports may reduce prices in such a way that marginal increments of income might decrease at a very fast rate and intersect marginal increments of income in industry much before the equilibrium point.

IMPLICATIONS OF THE SHIFT IN THE U.S. BALANCE OF PAYMENTS

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When I was asked to prepare a paper for the present program, my mind went back to a session of the annual meetings of the American Economic Association in January, 1946, just a few months after the end of World War II. It was at about this time that one could detect the first faint rumblings of the cold war, but it was too early for the papers at that session to have been prepared with much consciousness of a future problem of coexistence. In any event, mine was not. Never-the less, the speakers on that program, without claiming any special powers of clairvoyance, were very much aware of the possibility of a future problem of international disequilibrium. Yet they would have been surprised, I suspect, at the form the problem has taken in most of the postwar years.

I

If we take a broad look at the postwar U.S. balance of payments, surely the most striking fact that stands out is that the United States has been in over-all deficit with foreign countries since 1949. That is to say, if we exclude the balance with international institutions, the United States has experienced a net loss of gold and dollars to the rest of the world in every calendar year of the fifties. For the eight and one-half year period from January 1, 1950, to June 30, 1958, this "cash deficit" aggregated 12.3 billion dollars, of which 4.0 billion was financed by gold and 8.3 billion, or more than two-thirds, by an increase in short-term dollar liabilities to foreign countries. Moreover, the deficit was at a near-record annual rate of 3.4 billion dollars in the first half of 1958. Actually, the data show a slight deficit for the year 1949 itself, but the figure is so small that 1949 may best be regarded as a year of balance separating a period of heavy over-all surplus from the subsequent period of persistent and frequently heavy over-all deficit. This situation of deficit is in marked contrast, not only to the early postwar years, but to most of the interwar period. Indeed, from 1930 through 1941, the U.S. balance of payments was characterized by an over-all surplus in every single year.

If we look for an explanation for this striking reversal in the U.S. balance of payments since 1949, we find that some of the more obvious avenues of inquiry turn out to be blind alleys. For example, little light

is shed by trying to explain the reversal in terms of the persistently high level of "extraordinary" U.S. government expenditures abroad. In the first place, the level of such expenditures (grants, net government loans, and U.S. military expenditures abroad) has been somewhat lower in the years since 1949 than in the early postwar years, averaging 4.7 billion dollars annually for the period 1950 through 1957, as compared with 5.3 billion for the period 1946 through 1949.[1]

In the second place, if the analysis is to get below the surface, it is necessary to distinguish sharply between expenditures which were motivated by balance-of-payments factors and expenditures which were motivated by other considerations. In the early postwar years—say through mid-1950—U.S. extraordinary expenditures abroad were primarily in response to a temporary situation of acute international disequilibrium focused on the United States. The counterpart of these expenditures was the large foreign (particularly Western European) dollar deficit on current account that prevailed during this period. To a large extent, of course, this foreign deficit was a planned deficit, reflecting a remarkable joint undertaking in economic reconstruction.

Since 1950, however, and particularly since 1952, American extraordinary expenditures abroad have not been mainly motivated by considerations of international disequilibrium. Following the outbreak of the Korean war in mid-1950, the major purpose of such spending quickly shifted from economic reconstruction to mutual defense. After 1952, much the most important form of extraordinary expenditure was not grants or loans but U.S. military expenditures abroad. While extraordinary in the sense of not being governed by normal commercial criteria, such expenditures have not been mainly determined by balance-of-payments considerations. Nor have they shown any tendency to decline. Unlike grants and loans, these expenditures have sharply reduced the current-account deficit of foreign countries with the United States, and for Western Europe in most recent years have transformed a deficit into a surplus. Such expenditures may be regarded as part of the cost of coexistence—a cost which is not likely to fall without a basic change in the international political scene.

Another blind alley that we should examine briefly before proceeding further is the possibility that the growth of American investment abroad may be the explanation for the reversal in the U.S. balance of payments. During the years 1950 through 1957, net private U.S. capital exports averaged 1.6 billion dollars annually, as compared with an annual average of 0.7 billion for the years 1946 through 1949. This increase in capital exports, however, has not quite kept up with the increase in

[1] These figures exclude U.S. government grants and loans to international institutions.

American income from foreign investments; such income averaged about 1 billion dollars more per year in the period 1950-57 than in the period 1946-49. As long as so much new capital outflow is in the form of direct investment and as long as direct investment continues to be so profitable, there is little prospect that the growth of American investment abroad will exceed the related growth of income flowing back to the United States.

II

Having disposed of extraordinary expenditures and the growth of American investment abroad as explanations of the reversal in the U.S. balance of payments since 1949, we find ourselves obliged to explain the reversal mainly, if not exclusively, in terms of normal payments and receipts on current account. That is to say, we must explain the reversal either in terms of a decline in American exports of goods and services or in terms of an increase in American imports.

The first of these alternatives we can immediately rule out. Even if we exclude from invisible exports the rapidly growing income from foreign investments, average annual exports of goods and services (excluding military exports) were about 10 per cent higher in the period 1950-57 than in the period 1946-49. Thus the behavior of exports does not help to explain the reversal; on the contrary, it makes the explanation more difficult. With respect to imports, however, the story is very different, and here, I submit, lies the basic explanation for the shift after 1949 from an over-all surplus to an over-all deficit in the U.S. balance of payments.

At this point, it may improve our perspective if we return to the international economic horizon as it appeared to those of us who were reckless enough to make predictions at the beginning of the postwar era. Then, as now, we were very much concerned with the U.S. balance of payments. Our basic concern, if I may speak collectively, was with the supply of dollars flowing abroad. In 1946, most of those who feared a long-run dollar problem were more impressed with the possibility of an inadequate supply of dollars than with the possibility of an insatiable demand. In this connection, we owed a great debt to the then current Department of Commerce study, *The United States in the World Economy*, by Hal B. Lary and associates. Lary had shown us that the flow of dollars was highly correlated with the level of American business activity and that this flow had fluctuated very widely during the interwar period. Indeed, the supply of dollars flowing to foreign countries declined by more than two-thirds from 1928 to 1933. With vivid memories of the depression, most American economists in early 1946

still felt that the long-run postwar problem after "reconversion" was more likely to be chronic stagnation than persistent inflation.

Apart from fears about the future level of American business activity, there was evidence, or so we thought, that the volume of U.S. imports was not very sensitive to price changes. This evidence seemed to suggest that American imports would not expand very much when the supply situation in war-ravaged countries improved. Thus, in 1946, there seemed to be ample reasons for fearing a world dollar problem arising from an inadequate or sharply fluctuating flow of dollars to foreign countries.

In this respect, however, American and British predictions turned out to be wide of the mark. Among the more sanguine prophets was Lord Keynes, who in his posthumous article of June, 1946, predicted that U.S. merchandise imports, from a level of about 5 billion dollars in 1945, might reach 6 to 8 billion when war-torn countries had recovered their productive capacity. This prediction, which assumed U.S. import prices at twice their prewar level, was widely regarded as overoptimistic. It was soon vindicated, however, and later shown to err on the pessimistic rather than on the optimistic side. As early as 1948, U.S. merchandise imports reached 7.6 billion dollars, not far below the upper limit of Keynes's predicted range. By 1952, they had climbed to 10.8 billion dollars, and in 1957, a year partly marked by recession, they amounted to 13.3 billion. It should be noted that these figures all exclude military imports. On a 1947 base, the dollar value of American imports in 1957 stood at 222, an average increase during the decade of 8 per cent a year. Even after allowing for the rise in American export prices during the period, the dollars supplied to foreign countries in 1957 by U.S. merchandise imports could buy almost twice as much American real output as the dollars thus supplied in 1947.

The growth in American imports from Western Europe has been particularly striking. From 1947 to 1957, the dollar value of U.S. merchandise imports from Western Europe and dependencies (again excluding military imports) increased by more than three times. The rise during this period was at an average rate of almost 12 per cent a year.

These rates of increase in American imports are much greater than the most optimistic would have predicted in 1946. Moreover, while there have been some ups and downs in imports during the postwar years, the setbacks—particularly the setbacks traceable to recession—have been much more mild than had been generally expected. MacDougall maintains that a moderate U.S. recession might easily cut into foreign monetary reserves to the extent of 5 to 10 billion dollars, and

on the basis of interwar disturbances, such as the 1938 recession, this conclusion seems entirely reasonable. Yet this is certainly not the lesson of the recent recession. In the second half of 1957, U.S. merchandise imports were 4.7 per cent higher than in the second half of 1956. Nor did they fall to any significant extent during the worst of the recession. In the second quarter of 1958, which marked the trough, imports were only 1.5 per cent below the corresponding quarter of 1957. Moreover, this quarter, far from being characterized by a net inflow of gold and dollars, was marked by a net outflow of 1.1 billion dollars, the result mainly of an abrupt decline in American exports.

III

The sharp rise in imports since the war and the freedom from important setbacks attributable to recession raise questions which need more thorough investigation than is possible in this paper. If we compare 1957 with 1947, with figures for 1947 set at 100, we find that not only was the rise in the dollar value of merchandise imports (to 222) much greater than the rise in gross national product (to 188) but that the rise in the quantity of imports (to 168) was much greater than the rise either in industrial production (to 143) or in gross national product corrected for price changes (to 144). If we resist the temptation to explain away the problem by invoking a higher income elasticity of demand or a higher marginal propensity to import than was characteristic of the interwar period, I think we shall find that the rise in imports (or rather that part of the rise that is not explained by an increase in business activity) is attributable to a combination of factors operating in the same direction. In my ensuing discussion of these factors, I am not at all sure that I have set them down in the order of their importance.

In the first place, the ten-year period 1947-57 was marked by a 30 per cent rise in the American price level, as measured by the over-all price index published by the Department of Commerce to indicate changes in the price level of the gross national product. This rise in prices reflects a very considerable degree of inflation during the period. Other countries were of course also confronted with inflationary pressures, but in some cases were more successful than the United States in dealing with the problem. Moreover, a large number of countries became more competitive as a result of the 1949 devaluations, and any price comparisons between the United States and such countries over this period must take the change in exchange rates into account. My own view is that it is more than a coincidence that 1949, the year of devaluation, is also the year separating a period of massive over-all

surplus in the U.S. balance of payments from the subsequent period of over-all deficit.

In the second place, there has been the recovery of Western Europe as a source of supply. In 1947, U.S. merhandise imports from Western European (OEEC) countries accounted for 12.2 per cent of total U.S. imports. In 1957, imports from OEEC countries had risen to 22.2 per cent of a much larger total. This seems mainly a reflection of European recovery, and it also suggests that the American demand for Western European goods is elastic with respect to price. If the demand had been inelastic, as some had feared, a shift to the right in the European export supply curve should have resulted in a fall rather than a rise in the share of total American imports coming from Western Europe.

A third factor that probably accounts for some of the increase in imports is a lower level of American tariffs. The ratio of duties collected to dutiable U.S. imports fell from 19.3 per cent in 1947 to 10.8 per cent in 1957. While not a satisfactory measure of tariff changes, these figures undoubtedly reflect a fall in the average of effective American tariff rates. The fall in tariffs (along with the recovery of Western Europe) probably accounts in large part for the increased share of finished manufactures in American imports. Imports in this category increased from 17.4 per cent of total imports in 1947 to 27.3 per cent in 1957.

If tariff reductions have played a significant role in the growth of American imports since the war, then we have another bit of evidence that the American demand for imports is more elastic with respect to price than some had feared in the forties. The fall in tariffs appears to have been mainly focused on manufactured goods, and if the demand for these had been inelastic, a fall in price to the American consumer should have led to a fall rather than a rise in the share of total imports accounted for by this category.

While I have no desire to reopen a statistical controversy on which much has been written, I would like to point out that the early empirical investigations of American import price elasticity were concerned with the demand for imports from the rest of the world as a whole. Since a large fraction of American imports has traditionally consisted of a rather short list of primary products, several of which are not produced in this country, it is not surprising that statistical studies based on interwar data should show that the American demand for output from the rest of the world as a bloc was inelastic with respect to price, particularly since much of the interwar period was characterized by high tariffs designed to exclude imports of other categories of imports, notably finished manufactures. This conclusion, however, is not really in conflict with evidence which shows that the American demand for im-

ports may be highly elastic where prices in one foreign source of supply, say because of devaluation or because of a refusal to inflate as rapidly as other countries, fall in relation to prices elsewhere. Nor is the conclusion in conflict with evidence which shows that the American demand for imports may be highly elastic where tariffs have been lowered on items that had been protected precisely because the demand had been found to be sensitive to the lower prices prevailing abroad.

So much for the factors accounting for the postwar rise in American imports. What also requires explanation is the absence since the war of major setbacks in the level of imports that can be attributed to American recessions. In the recent recession, as we have seen, imports fell very little—much less, for example, than industrial production. Part of the explanation may be that U.S. imports, particularly imports of manufactured goods, are in large measure a function of disposable income, and that disposable income rather than falling during the recession simply stopped rising. Actually, disposable income has risen in every calendar year since the end of the war, and in the first half of 1958, when the recession reached its lowest point, was 1.1 per cent higher than in the first half of 1957. This is a very different story from the big declines in disposable income characterizing the recessions and depressions of the interwar years. Thus the freedom from major setbacks in the level of imports during postwar recessions may be largely explained by the fact that, because of the growth of "built-in stabilizers," disposable income fluctuates less than formerly with the ups and downs of business, and also by the fact that a larger fraction of imports in the manufactured category makes American imports more closely geared than formerly to disposable income.

IV

Up to this point in our discussion, we have established that the reversal in the U.S. balance of payments after 1949 has been primarily due to the rapid growth of American (nonmilitary) imports, and we have also tried to isolate the main factors responsible for this growth. In my remaining remarks, I would like to discuss briefly the effect of the reversal on the rest of the world and to indicate some implications for economic policy.

First of all, of course, the shift from a position of over-all net surplus to a position of persistent net deficit has been the factor chiefly responsible for the spectacular improvement in recent years in foreign monetary reserves. Actually, foreign gold and short-term dollar holdings have slightly more than doubled since 1949, rising from 15.0 billion

dollars as of the end of that year to 30.5 billion as of June 30, 1958.[8] All major areas of the world have participated in this increase, though by widely varying degrees. Sharing less than the average increase were: Latin America, where gold and dollar holdings during the eight and one-half year period increased by only 40 per cent; Asia, where such holdings rose by 63 per cent; and the sterling area, where the increase was 78 per cent. Sharing more than the average increase were Canada, where gold and short-term U.S. dollar holdings during the period increased by 126 per cent, and—at the top of the list—continental Western Europe, where such holdings in mid-1958 were just over two and one-half times as high as at the end of the forties.

While all major foreign areas participated in this increase in gold and dollar holdings, a few individual countries did not. Without naming names, it seems clear that in most such cases the difficulty was simply an excessive propensity to inflate.

I say "in most such cases," because there was another type of difficulty which, while it could be caused by an excessive propensity to inflate, was not primarily a current-account phenomenon. I am here referring to the type of problem experienced by the United Kingdom in the third quarter of 1957. In that quarter, British official gold and dollar reserves fell by 531 million dollars, not because of adverse developments on current account—indeed, the sterling area at the time had a small current-account surplus with the United States—but because of disequilibrating capital movements inspired by rumors of sterling devaluation. The dramatic way in which this situation, as a result of bold British monetary measures, was rapidly reversed shows that short-term capital movements, despite the cold war, can still play an equilibrating as well as a disequilibrating role. If evidence is needed, these developments also show that important gold and dollar drains can and do occur that have nothing to do with the so-called "dollar problem."

Indeed, the dollar problem, in the sense of an excessive foreign demand for dollars in relation to the supply, has so long been a misleading description of the actual situation that some observers in this country have become deeply concerned about the opposite problem. In fact, in view of the substantial net outflow of gold and in view of the big increase in official dollar holdings that can be converted at will into gold by foreign monetary authorities, there have been suggestions in the financial press that the United States may soon have to begin thinking seriously about the prospect either of depreciating the dollar in terms of gold and foreign currencies or of discontinuing its present policy

[8] These figures include private as well as official foreign dollar holdings, but exclude the gold and dollar assets of Eastern European countries and of international institutions.

of freely selling gold to foreign central banks in exchange for dollars.

Such counsel seems to me decidedly unwise. In the first place, at the present time almost half of total foreign gold and dollar holdings and about a third of foreign official gold and dollar reserves are in the form of dollars rather than gold. This has the great virtue not only of minimizing the outflow of American gold but of greatly increasing the world supply of convertible monetary reserves. The willingness of foreign countries to hold their convertible reserves so largely in the form of dollars is mainly a reflection of two considerations. First, because of its readiness to sell gold without limit to central banks in exchange for dollars at a price which has been unaltered since 1934, the United States has in effect made the dollar literally as good as gold from the standpoint of foreign monetary authorities. Indeed, the only rational reason for a foreign preference to hold reserves in the form of gold is the fear that the United States may some day change its gold policy without advance notice. Second, dollar reserves have actually been superior to gold in that they have earned a substantial return for foreign monetary authorities by being largely invested in U.S. government short-term securities. The importance of this last factor was revealed earlier this year when, as a result of easy-money policies in this county, the yield on U.S. Treasury bills fell below 1 per cent (from a yield of over 3½ per cent as late as October, 1957). Partly because of this drop, foreign monetary authorities used their current dollar receipts, not to buy Treasury bills, but to buy gold from the U.S. Treasury. As a result, the large external deficit in the second quarter of 1958 was financed almost exclusively by a near-record net outflow of gold.

Despite the net outflow of gold and dollars since 1949, U.S. monetary reserves remain very high. Partly because of domestic gold production, partly because foreign countries have obtained gold for dollars from sources other than the U.S. Treasury, but mainly because of the willingness of foreign monetary authorities to hold a large fraction of their reserves in the form of dollars, U.S. monetary gold fell from only 24.6 billion dollars at the end of 1949 to 21.4 billion as of mid-1958. In view of the increase in foreign gold reserves, this represents a decline in the American share of the world total from 69 to 54 per cent. That is to say, after eight and one-half years of external deficit, the United States still retains over half the world's monetary gold, even though its share of world imports is only about one-eighth.

Thus there is no need to be alarmist about the deficit in the U.S. balance of payments. So far as the past deficit is concerned, the United States has been performing a service for the world by promoting a better distribution of existing monetary reserves and thereby, perhaps, increasing the probability and longevity of coexistence. In so doing, the United

States has also been performing a service for itself. For the deficit, which in some degree is the result of American inflationary tendencies relative to those abroad, has at the same time moderated the price increases that would otherwise have occurred in this country. Just as the over-all external surplus before 1950 was an important source of inflationary pressure in the early postwar years, so has the external deficit of recent years been an important price-restraining influence.

This is by no means to deny that at some stage we may have to take positive steps to reduce or remove the external deficit. After all, it is a rare if not unique situation to be able to pursue domestic policies without taking into account their effect on the balance of payments. Luckily, because of our still very large reserves, there is no need for hasty action, for this is an area in which the remedies could easily be worse than the disease. In particular, it would be most unfortunate if, in dealing with the deficit, we were to yield to the temptation to introduce measures in the field of gold policy which would discourage foreign monetary authorities from holding reserves in the form of dollars. For, by adhering to policies which have encouraged foreign countries to hold their reserves in the form of dollars, the United States has greatly expanded the total volume of convertible monetary reserves.

In dealing with this problem, there is one area in which we can reasonably expect help from foreign countries, particularly from our Western European partners. One of the elements in the present balance-of-payments situation is the existence of foreign quantitative restrictions on purchases from the United States. Originally dictated by a condition of acute dollar shortage, these restrictions are now largely maintained, not to protect the balance of payments, but to protect foreign industries from American competition. Since 1952, great progress has been made in removing these restrictions, but much remains to be done. We can properly do our best to persuade other countries, both in their interest and in our own, to take further big steps in the removal of such restrictions. In this, as in the sphere of U.S. domestic policy to influence the balance of payments, we and our neighbors overseas will do well to bear in mind the final published words of Keynes that "we shall run more risk of jeopardizing the future if we are influenced by indefinite fears based on trying to look ahead further than anyone can see."

DISCUSSION

Henry G. Aubrey: I am not quite clear in my own mind to what extent Dr. Prebisch' challenging paper is an extension of his earlier theses on the income distribution between industrial and primary-producing countries—the center and the periphery. Whether seen in conjunction with the theories first expressed in the ECLA literature in 1949 (UN Economic Commission for Latin America, *The Economic Development of Latin America and Its Principal Problems,* and *Economic Survey of Latin America, 1949*) or not, his theoretical contribution will be scrutinized by economists for some time to come. After considerable soul searching, I decided that my time in this discussion would not permit me to do sufficient justice to the theoretical aspects. Thus, while Dr. Prebisch, the great practitioner of applied economics, for once deals mainly with theoretical matters, it may not be unwelcome that I elaborate somewhat on the empirical aspects of commercial policy in the context of competitive coexistence with the Sino-Soviet bloc, a subject on which a research project is also in progress at the National Planning Association under my direction. And in this respect my remarks are in line with and even extend Dr. Prebisch' conclusions with which I am rather more in accord than with some of his theoretical premises.

In dealing with mechanisms that are supposedly "inherent" in elasticities or terms of trade, I cannot help feeling uneasy about the degree of generalization and the inference from historical statistics that the material permits. Our methods of determining elasticities, especially over the long term, are far less than perfect, and the difficulties of terms-of-trade analysis are also great enough to warrant caution. I do not want to repeat what I said on this subject before this Association three years ago ("The Long-term Future of United States Imports and Its Implications for Primary-Producing Countries," *Papers and Proceedings,* May, 1955), but I would like to point to certain changes in the structure of world trade that have a bearing on Dr. Prebisch' topic.

The numerical examples used by Dr. Prebisch are based on the usual assumption of an income elasticity of less than unity for primary products. On the demand side this assumption seems reasonable enough, but long-term supply elasticities within the industrial countries have been shifting significantly. The domestic output of certain minerals has not kept up with demand, so that the import requirements are rising relative to income growth in the industrial world, notwithstanding some protectionist interference. As a result, any individual exporter of primary commodities has far less reason to be concerned with over-all elasticities than with the prospects of his chief product.

Recent projections of the UN Economic Commission for Europe for 1975 (*Economic Survey of Europe in 1957,* Chapter V) bring out with startling clarity the gulf that has been opening between the outlook for metals and fuels and that for food and agricultural raw materials. In both Western Europe and North America the import needs of the former are expected to grow very much faster than income, in contrast with those of agricultural products.

As a result, disquieting regional differences are likely to develop. Countries exporting mainly petroleum and metals in the Middle East, Western Europe and dependent overseas territories and the dollar area in Latin America can look forward to as much as double their recent export earning in about fifteen to twenty years. But some exporters of agricultural commodities in Asia and non-dollar Latin America may face increases of export revenue of as little as 1.5 per cent per annum if they are to rely on the increase of demand in the industrial countries of the West alone.

These differences in prospects have profound economic and political implications. Some countries in the favored group ought to be able to pay for their current imports and even for a good part of their development needs from export revenues under two conditions: that their export revenues are reasonably stable (which they are often not) and that they use their foreign exchange accruals wisely for economic development (which in the past just the most fortunate recipients of oil revenue have often neglected to do). Such countries can afford to have the rising import coefficient to which Dr. Prebisch pointed. Their problem is rather the most efficient channeling of their resources.

By contrast, countries least favored with the right kind of resources may have barely enough import capacity to take care of their population growth unless they substitute own production for some of their imports, as Dr. Prebisch shows. Unhappily, before the import replacement can take place, disproportionately high capital goods imports are usually required through the operation of a kind of "acceleration principle" on both investment and imports. Thus, at that stage, most countries would be even more dependent on larger export revenue or foreign assistance.

It is therefore not surprising that countries bent on economic development look for new markets in the Soviet bloc, not only for relief from temporary surpluses, as happened in the case of rice or cotton during the last years, but in the hope for larger total exports over time. If they find them in the bloc, it may not be chiefly because the centrally planned economies are in the habit of projecting their long-term needs, as Dr. Prebisch pointed out. In fact, for dogmatic reasons the Soviet bloc has shown little inclination to plan imports far ahead; rather it regards imports as a residual, and experience has found Soviet trade under bilateral agreements quite erratic. (See Raymond F. Mikesell and Jack N. Behrman, *Financing Free World Trade with the Sino-Soviet Bloc*, Princeton, 1958, pages 80 ff.) But there can be no question about the bloc's large import potential because its headlong drive causes the bloc economies to be chronically short of many primary products, especially in the consumable category. Consequently, if they find it politically convenient, the bloc countries are well equipped to absorb without economic cost, and even with economic benefit, large additional quantities of products which the West cannot use or does not want to take for reasons of domestic policies of protection. (See Jan Wszelaki, *Soviet Economic Strategy: The Role of East-Central Europe*, National Planning Association, 1958.)

Moreover, the Soviet bloc is increasingly capable of supplying in return

the kind of goods primary producers can well use for their economic development in addition to some primary products, like petroleum. Hence, when producers of coffee, cocoa, wool, or other products in periodic surplus sell them in return for oil of which they have a deficit that overstrains their exchange availabilities, this is an economically rational deal. The Soviet bloc has also offered credits for oil producing and refining equipment, repayable in primary products. The U.S., in the past, has not been inclined to make government funds available for this purpose on the grounds that private capital can and should take care of petroleum development. If this kind of Soviet deal arouses sentiments out of proportion with the magnitude of the transactions, is it not due to the West's long-standing difficulty in agreeing with certain countries about development principles—an ideological-political rather than a mere economic problem, as the Russians know all too well?

In the not infrequent clashes between economic principles and political reality, uneasy *ad hoc* compromises are usually made, and the questions of reciprocity and multilateral trade raised by Dr. Prebisch are no exception. Dr. Prebisch has offered an interesting extension of the infant-industry argument: If protection is not continued beyond the point where, as I understand it, the ratios of wages to the marginal product of labor in the center and periphery draw even, then wages in the periphery cannot rise further (except, presumably, in line with further increases in productivity); the inequality of wages and opportunities would thus be prolonged. Whether or not one holds with this Myrdalian interpretation of Dr. Prebisch' remarks, international political practice has accorded to protection a good deal of *de facto* recognition.

While reciprocity is still the byword in trade negotiations, the industrial countries have in fact accepted a fair measure of discrimination on the part of less advanced countries; and import substitution has become quite respectable as a historic instrument of development. Even the General Agreements on Tariffs and Trade have accorded a special position to developing countries. Those facts may well speak louder than any theoretical arguments if one would only admit that they are more than temporary deviations from an abstract ideal.

Moreover, protection, as we well know, has never been and is not now a characteristic only of the less developed countries. The original sin lies far back in the history of the industrial nations and, in more than one sense, it is still with us. In a penetrating analysis, a group of experts of GATT (*Trends in International Trade*, Geneva, October, 1958) has demonstrated the trade-stifling effects of agricultural protectionism in the industrial countries where, moreover, protection of manufacturing and mining industries by tariffs and other devices is also rife. Under these conditions it ought not to be necessary for less developed areas to show cause why their protectionism does not really reduce world trade. It does, but the burden of initiative—in deeds rather than words—inevitably rests primarily with the champions of the "true religion" of multilateralism. And as long as they are not willing to fully live what they preach, their cause cannot prosper among those with lesser capability to shoulder the consequences.

By the same token, if the industrial countries, with the United States in the van, were willing to acknowledge for the time being the universal prevalence of protectionism, no matter how regrettable, a less formalistic and more charitable view might also be taken of reciprocity. There are real structural differences and great disparities of economic resiliency between the less and the more developed countries. Shocks that would inflict great hardship on the former can often be absorbed with less profound consequences in the latter; moreover, well-diversified economies are better equipped to formulate internal policies designed to neutralize the effects of external concessions and, perhaps, even turn minor adversity into beneficial change. Hence, when the limits of arithmetical reciprocity are reached, some problems will probably remain which can be solved only by unilateral concessions on the part of the industrial countries. If the illusion of formal symmetry is discarded, policy could devise the means. If not, there is a real danger that Soviet bilateralism will distort the structure of world trade into a pattern even further removed from the ideal of multilateralism. In the present phase it seems to me that this ideal will be better served by pragmatic flexibility than by unbending insistence on forms with insufficient substance in today's reality.

I have not been asked to comment on Professor Hinshaw's paper and probably ought to leave it to Dr. Schlesinger's gentle ministrations. But it contains some elements that have a bearing on Dr. Prebisch' subject as well. For one thing, Mr. Hinshaw points to the postwar surge in U.S. imports and its relevance for elasticities and propensities. What he says confirms my belief that long-run import elasticities must be greater than what the statistical correlation analysis of annual time series has seemed to convey, and that there is no ground to expect any further decline in the U.S. propensity to import although Dr. Prebisch and many others have pointed to such a trend in the past. In fact, as I have stated elsewhere (*United States Imports and World Trade*, Oxford, 1957, pages 14 ff.), there has not been any sustained decline over the last hundred years but rather three sharp drops related to distinctive and not precedent-setting changes in the structure of the American economy.

But let me quell right now any overoptimistic conclusions from these tendencies for primary-producing countries. Mr. Hinshaw was chiefly referring to U.S. imports from Western Europe, mostly manufactured goods. This kind of trade is underlying the observation of the GATT secretariat that trade among industrial countries rose faster than between them and the less developed areas. (*International Trade*, 1955 and 1956.) Nonetheless, one finds some comfort for the less developed countries even in greater trade of manufactures. They all contain varying amounts of imported raw materials. The surprisingly great U.S. propensity to import manufactures thus indirectly promotes more exports of primary products as well, although this benefit is harder to trace and the resulting exchange proceeds may not be all in hard currency.

But, if I follow Mr. Hinshaw into the financial field for a minute, I would introduce a qualification to his implication that international disequilibrium is now only a negligible motivation for U.S. capital movements. This is only

partly true even for Europe, for support again had to be given to Great Britain and France. Moreover, there have been numerous instances of "bailing out" operations in less developed countries from Latin America to Turkey and India, particularly in the last twelve months. This necessity chiefly arose from overbuying for economic development. It seems to me there is a policy lesson in this situation: Co-operation that is not achieved *ex ante* is often brought about *ex post* as emergency assistance because it is hard to deny development aspirations in the political climate of competitive coexistence. One is entitled to argue that this is not the most rational way to go about development assistance. But one might also be excused for feeling that it is better to achieve some co-operation *ex post* and sometimes perhaps for the wrong reasons than not have it come about at all.

Finally, as Mr. Hinshaw mentioned U.S. gold price policy, I would like to offer a comment from the angle of competitive coexistence. One of the objections to raising the price of gold is based on greater proceeds from gold sales by the Soviet Union, one of the world's largest producers. A subsidiary argument may be found in the growing stress on costs and productivity in the USSR; some experts believe that the USSR may now be producing less gold than one thinks because it is not economical at $35 an ounce. Of course, there are those more concerned with political motivations and who fear that some day the Russians may use gold as a weapon against the free world, either by large sales or through the use of gold as a basis for a convertible ruble as a spearhead in international trade. I am not convinced of the ultimate harmfulness of either course. If we have faith in our own philosophy, greater multilateralism may benefit our friends at least as much as our competitors; moreover, it would tend to make uncommitted countries less rather than more dependent on the bloc. And if the Soviets were just to sell more gold, this would, first, strengthen the reserves of our friends for which we have shown so much solicitude in the past. Second, regarding the U.S. position, I fail to see how we could be consistent in fearing both a continued drain of our gold reserves and greater sales of Soviet gold. Finally, so far at least, the Soviets have seemed as conservative regarding gold as any good capitalist but have been selling more commodities instead; and certainly, if they sell tin, aluminum, or oil, we appear to like that even less.

EUGENE R. SCHLESINGER: The Chairman has asked me to restrain, if possible, my normal academic impulses for critical harping and to branch out and discuss aspects of the international payments problem which Hinshaw was forced to omit for reasons of time. While I would deserve to be expelled from the economics profession if I could not produce an equally lengthy paper based on various differences in nuance and emphasis, I am going to follow the Chairman's suggestion—principally because I find myself in virtual agreement with the substance of Hinshaw's sober and careful review of postwar trends in international payments. In fact, our agreement about the past and present is so complete that I believe the most useful form which my supplementary remarks can take would be to use Hinshaw's paper

as a springboard for some speculation about possible future trends and developments. In doing so, I shall try, first, to distinguish between the operation of transitional and long-run (or continuing) forces in the postwar period and, second, to determine in what special ways the peculiar characteristics of an "era of coexistence" may shape and alter normal long-run tendencies.

Of the various factors analyzed by Hinshaw, the only one which can be unequivocally classified as being of the long-run or continuing type is his emphasis on the very substantial rise in American prices which has taken place since 1947. In this connection, it is interesting to note the recent suggestion by the London *Economist* that this year's weakness in the dollar "may owe something to the belated working of the long-run forces on which Keynes set so much store in his posthumous article—the matching of America's high productivity by equally high wages and costs." Keynes's suggestion does indeed offer a clue to relatively recent developments, but it does not necessarily tell us anything about the future since the argument still suffers from its original weakness of being essentially static in nature. The implications for international payments problems of comparative rates of change in productivity and costs can best be appraised against a background of those universal pressures for economic security, welfare, and development which it has become commonplace in recent years to characterize as an "age of inflation."

The postwar years do show that there has been a tendency throughout the world for many of the traditional restraints against inflation to disappear or weaken considerably. At the same time, however, the experience of a number of major countries has also clearly demonstrated that there is one major restraint to inflation which is still present to a varying degree; viz., the limitations imposed by balance-of-payments considerations. By itself this second observation does not add very much to our knowledge about future disparate movements in rates of price change. But its usefulness as a tool of analysis increases significantly if we bring into the picture the basic concept which most proponents of a "dollar shortage" have emphasized in one form or another; namely, the lack of integration of the United States with the world economy in the sense that its share of total trade is considerably smaller than its share of production.

With this in mind, we can now attempt to rephrase Keynes's posthumous dictum in a dynamic fashion which takes into account postwar experience: In an age of inflation, there is a tendency for costs and monetary living standards to increase in virtually all countries, but in view of the lack of integration of the United States in the world economy, this is the one country that is in a position to carry this tendency to its ultimate conclusion. It would thus seem quite reasonable to conclude that, during a period which is not characterized by significant international political tensions, there would be in existence a definite and pronounced force which would tend to compensate for any major long-run departure from equilibrium in the American balance of payments. This adjustment mechanism, which is based on assymetrical differences among countries in the relationship between inflationary pressures

and balance-of-payments considerations, is not one that is usually emphasized in theoretical analysis. It seems, nevertheless, to be a potent one in the light *of the political and social realities of the modern world.*

But how does the fact of coexistence affect this picture of the international payments situation? At the risk of oversimplification, but with the advantage of vividly bringing out the contrasts involved, one can venture to propose that the outstanding characteristic of coexistence is a tendency for the United States to be overintegrated with the world economy in military and political terms and that, furthermore, this tendency may offset and, at times, perhaps even overcompensate for what I have characterized as the more normal condition (i.e., American underintegration in economic terms). The responsibilities undertaken by the American people affect the balance of payments both indirectly and directly; the over-all burden of the defense effort has a definite impact on movements in productivity, costs, and prices, while certain types of expenditures contribute directly to the rest of the world's dollar earnings.

Depending on the grossness of the measure which one employs, government expenditures have been providing between 20 and 30 per cent of the total annual supply of dollars made available for international use and amount to several times more than the recent annual gains in international reserves by the rest of the world. In fact, it could be argued that this aspect of overintegration alone is sufficient to explain recent American payments deficits. In view of rapidly changing military technology and of uncertainty as to the priorities in national defense policy, it would be foolish to attempt to project the absolute level of future overseas defense expenditures. Full development of and reliance upon the ICBM could, for example, bring about a precipitous drop in such expenditures, while a policy based on the IRBM could, although leading to lower overseas personnel expenditures, create a temporary increase in construction expenditures. However, with such new devices as atomic planes on the horizon, the problem becomes even more difficult to manage.

It is fortunate, therefore, that the need for projecting the future level of these expenditures, while desirable, is not absolutely essential for the problem at hand. An alternative possibility lies in estimating the change in future overseas military expenditures relative to the expected movement in the total international supply of dollars. In the light of the careful projections of merchandise and service imports and foreign investments which have been made by MacDougall and others, it seems quite likely, no matter what the absolute direction of movement of government expenditures, that the relative contribution of these to the world dollar supply will tend to decline and that the comparative strain on the United States balance of payments created by the expenditures is now at a peak or will shortly reach one. From the long-run point of view and in a growing world economy, the indirect aspect of American overintegration should not prove to be too disequilibrating.

The same degree of confidence does not unhappily apply to the indirect balance-of-payments effects of the American defense effort. Much of the

highly publicized increase in the rate of gold drain is due to the huge budgetary deficit and exaggerated fears abroad as to its inflationary impact. Fortunately, these fears have not proved entirely warranted because of the substantial increases in productivity which have occurred this year; and with the rise in government revenues which can be expected to accompany further economic recovery and expansion, the monetary and psychological causes for weakness of the dollar shall become smaller. On the other hand, if the American people and their elected representatives do not recognize the fiscal responsibilities imposed by coexistence and continue to run large budget deficits, it goes almost without saying that all bets are off in regard to future balance-of-payments developments.

MAINTAINING FULL EMPLOYMENT AND ECONOMIC STABILITY

THE 1957-58 BUSINESS CONTRACTION: NEW MODEL OR OLD?*

By GEOFFREY H. MOORE
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I. *Towards an Appraisal*

The business cycle is not dead. The 1957-58 contraction and the recent recovery demonstrated that it is still to be reckoned with. It is not the same identical cycle we have known in the past. The business cycle is like an automobile. Every new model is different, with bigger fins (they even call them stabilizers), automatic transmission, safety belts, and a smoother ride. But a car is still a car. What we know about the basic characteristics of business cycles should be taken into account in any calculations of the short-run future of the economy. Where these characteristics have changed, we should take the changes into account, too. What did the 1957-58 experience contribute to this knowledge?

This paper attempts to make a start on this appraisal by examining, first, the substantial similarities between the 1957-58 contraction and preceding contractions; then the substantial differences. This is not an easy classification to make. Really it serves only an expository purpose. There are all shades of difference, just as with the new automobiles. Moreover, where the difference represents the latest extension of a trend in cyclical behavior, both the similarity and the difference deserve emphasis. Thus a comparison of this sort is complicated. Couple this with the fact that there are a great many aspects of cyclical behavior to examine, and a lot of history, the justice of my claim that this appraisal is only a beginning is apparent.

II. *Features of the 1957-58 Contraction Substantially Similar to Earlier Contractions*

Duration. At first sight it might seem that in respect of duration the 1957-58 contraction is more different from than similar to its predecessors. In terms of the National Bureau's business cycle chronology, the contraction lasted nine months—from the peak in July, 1957, to the trough in April, 1958. Only three of the preceding twenty-four contrac-

* I am indebted to Arthur F. Burns for comments on an earlier draft of this paper, and to Sophie Sakowity, Dorothy O'Brien, Sandra Renaud, and Irving Forman for the statistical computations and charts.

tions, going back to 1854, were shorter than this. The median is twice as long, eighteen months.

However, a considerable number of contractions, especially since World War I, have not been much longer. The 1923-24 contraction was fourteen months; 1926-27, thirteen months; 1937-38, thirteen months; 1948-49, eleven months; 1953-54, thirteen months. The contractions that immediately followed World Wars I and II, in 1918-19 and 1945, also were short—seven and eight months, respectively. Only the 1920-21 and 1929-33 contractions were substantially longer—eighteen and forty-three months. There is some indication, therefore, that business cycle contractions in the United States have typically become somewhat shorter than they were before World War I, and the 1957-58 contraction adds one more bit of evidence on this score (Chart I).[1] Since the length of a business cycle contraction cannot be determined with absolute precision (because the peak and trough dates themselves are uncertain), close comparisons are not warranted.

There is another aspect, also, to this matter of duration. From some points of view, the duration that is of most consequence is that of the period when economic activity is, in some sense, "depressed." The contraction is only the initial part of this period, and although undoubtedly it is the part that is of greatest concern, the recovery period may also be a time of economic distress and uncertainty, particularly if it is prolonged.

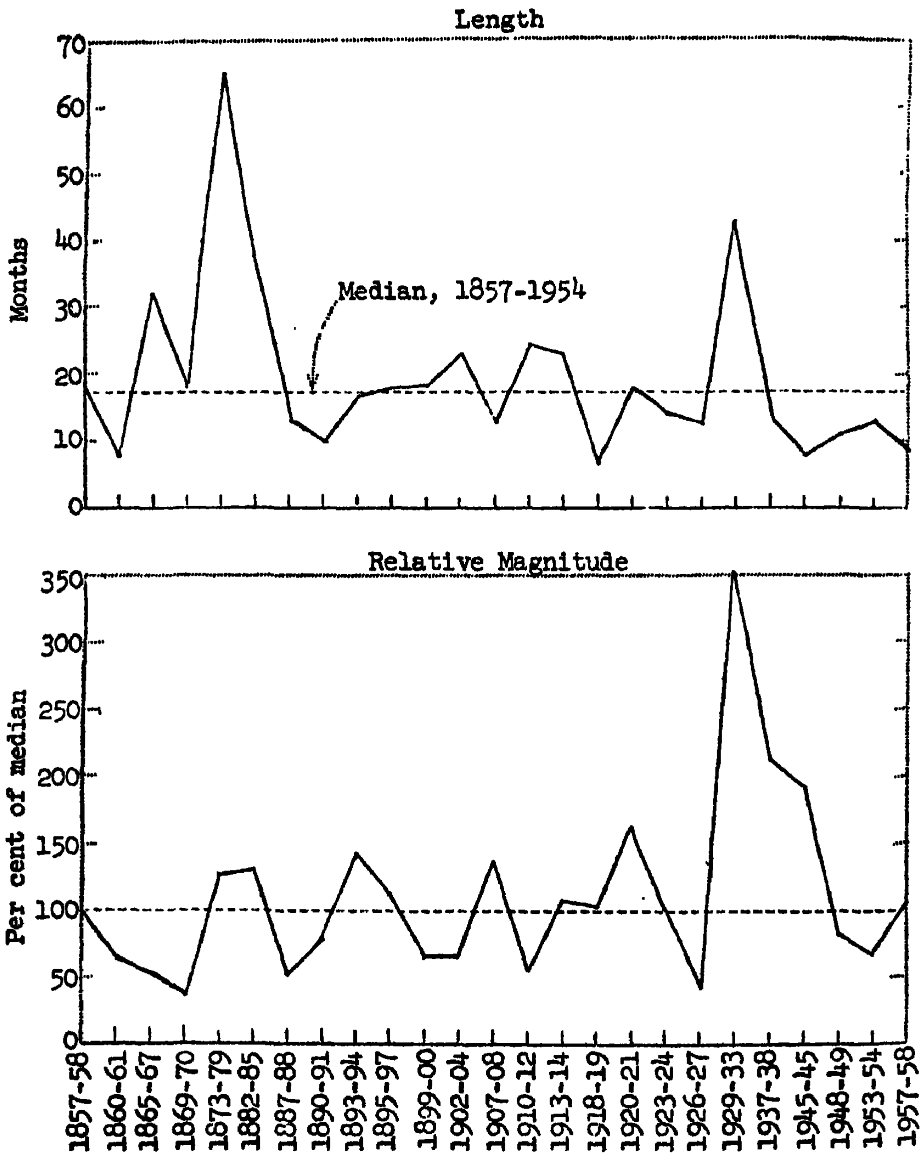
In a recent study, two ways of measuring this period of depressed activity were proposed.[2] One used a single monthly index of production—the Federal Reserve index of mining and manufacturing production—and measured the interval from the business cycle peak to the month when the index regained the level it had at the peak. The other was based on a collection of ten indicators of aggregate economic activity and measured the interval from the business cycle peak to the month when half the indicators had regained their respective levels at the peak date. Other measures might readily be conceived, but these seemed adequate for the purpose, provided no implication was drawn that the attainment of preceding peak levels indicated a satisfactory, less than satisfactory, or better than satisfactory state of affairs.

The durations of periods of "depressed activity" have ranged from a year and a half to two years in mild or moderate recessions like those of 1949 or 1954, two and a half to three years in severe recessions like those of 1921 and 1938, and seven years or more in the Great Depression. These periods seem to bear a rough relationship to the severity of the decline during the contraction, mainly because the recovery periods

[1] The monthly business cycle chronology, 1854-1957, is given in *Measuring Recessions*, by Geoffrey H. Moore, Occasional Paper 61 (NBER, 1958), p. 260.
[2] *Ibid.*, pp. 280-281.

CHART I

LENGTH AND MAGNITUDE OF BUSINESS CONTRACTIONS IN THE UNITED STATES, 1857-1958



Duration is measured from monthly business cycle peak to trough. Relative magnitude is based on the average decline from specific cycle peak to trough in three indexes of business activity, each adjusted for long-term growth (A.T.&T., Persons-Barrons, and Cleveland Trust Company). The average decline in each cycle is taken as a percentage of the median decline for the twenty-four contractions, 1857-1954.

SOURCE: National Bureau of Economic Research, October, 1958.

(from the trough to the preceding peak level) have usually been substantially longer following severe declines than following mild ones.

It is too early to tell how closely the current period of depressed activity will resemble those in other cycles. Since the 1957-58 decline was intermediate in severity (see below), the period of depressed activity, to be in line with historical experience, should be within a range of a year and a half to two and a half years.[3] In terms of the industrial production index, the actual period may fall within this range, since by November, 1958, sixteen months after the July, 1957, business cycle peak, the index had recovered about three-fourths of its decline from peak to trough.

In terms of the other measure mentioned above, the recovery date may have been reached by November, 1958. Five of the ten aggregate indicators had exceeded their July, 1957, levels by that date. These were gross national product, personal income, retail sales, bank debits outside New York, and wholesale prices. These are all dollar value or price series. The five that had not yet recovered their pre-recession levels are industrial production, carloadings, nonagricultural employment, the unemployment rate, and corporate profits. All of these except profits are physical volume series. It appears, then, that the period of depressed activity will be longer when activity is measured in physical terms. Subsequent revisions of the figures may, of course, alter these results.

Severity. In terms of severity, or magnitude of decline from peak to trough, the 1957-58 contraction closely resembled many of its predecessors. Despite its brevity, the decline was somewhat larger, according to most measures of business activity, than in each of the four milder contractions since 1920, but much smaller than in the three severe contractions of 1920-21, 1937-38, and 1929-33.[4] The intermediate position of

[3] This range can be narrowed if account is taken of the length of the contraction period. Since the period of depressed activity consists of two phases—contraction and recovery—when the contraction period is known, only the recovery period need be estimated, and presumably this should lead to a more precise estimate of the full period. The eighteen-to-thirty month range for the full period was defined on the basis of a consideration of the apparent intermediate severity of the contraction before its actual severity or length was known (see *ibid.*, pp. 265, 289-291). Since the actual duration of the contraction was nine months and its severity was in the intermediate range, an appropriate estimate for the recovery period in the light of these facts and the historical record might be put at nine to fifteen months. This would yield an estimate of eighteen to twenty-four months for the period of depressed activity.

[4] For the percentage changes in seven measures of business activity during these contractions, see *ibid.*, p. 261. The corresponding percentage declines for the July, 1957-April, 1958 contraction are: nonagricultural employment, 4.4; gross national product, 3.7; retail sales, 3.4; bank debits outside N.Y.C., 5.9; industrial production, 12.2; and personal income, 0.9. The average unemployment rate for 1958 was 6.8 per cent. The 1957-58 contraction ranks fifth in severity (mildest first) among the eight contractions since 1920 according to the first four measures cited and the unemployment rate; it ranks fourth according to the other two measures.

the 1957-58 contraction is shown also by a much longer record (Chart I). The average decline during 1957-58 in three indexes of business activity was very close to the median of all the cyclical declines in those indexes since 1854. In other words, about half the declines were larger than the latest one and half were smaller.

The 1957-58 contraction resembled its predecessors, also, in respect of the time when its relative severity became apparent.[5] Historical studies have shown that rates of decline during the few months in most measures of aggregate economic activity do not furnish a reliable gauge of the ultimate severity of a contraction. After six months or so have elapsed, however, the comparative declines in different contractions array themselves fairly well in relation to the ultimate extent of the declines. If the declines in certain "leading" indicators are analyzed in this way, the changes during the first four months or so of the contraction yield fairly reliable indications of severity. This much seems clear from an analysis of the seven business recessions between 1920 and 1954.

Developments during the 1957-58 contraction, on the whole, supported these results. After the first four months of the contraction had elapsed, comparisons of the declines in a group of ten leading indicators with the corresponding four-month declines in earlier recessions, suggested a contraction of intermediate severity. Subsequent comparisons compiled month by month for the same series continued to indicate this. On the other hand, the comparative picture shown by ten indicators of aggregate activity became reasonably clear, and like that shown by the leading series, only after about seven months of the contraction had elapsed. This type of analysis, it should be understood, did not pinpoint the magnitude of the 1957-58 decline but rather defined a broad range within which it might fall.

Scope. The contraction that began in 1957 quickly embraced a large proportion of the nation's economic activities. Until July or August, declines had occurred more or less sporadically in various sectors or types of economic processes. In September these declines became general. By the end of the year, among the ten aggregative indicators mentioned previously the only one that was at a higher level than it had been in July was the wholesale price index. Employment was lower in manufacturing, mining, construction, transportation, communication, and wholesale and retail trade.

It was the scope of these declines, as much as any other single thing, that identified what was going on as a business recession. Or, to put it differently, the characteristic of generality was one of the features of the 1957-58 contraction that puts it in a class with all the other business

[5] See *ibid.*, pp. 265, 282-286.

contractions of history. Burns and Mitchell, it may be recalled, included this characteristic as part of their definition of a business cycle: "... a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle. ..."[6] Chart II shows how this characteristic, measured by means of a diffusion index, has been identified with business cycles in recent years.

The chart displays another prominent characteristic of business cycle expansions and contractions; namely, that they become less widely diffused before they end. The 1957-58 contraction was no exception to the rule. Indeed, one of the earliest signs that the contraction might be drawing to a close, though it was by no means conclusive at the time, was the diminution of the scope of the contraction that began to be observable last winter. More industries, more areas, and probably more business enterprises were experiencing declines in production, employment, orders, and profits in October or November last year than at any time since, with the exception in some instances of February, 1958. The comprehensive diffusion index in Chart II reached its lowest ebb in November, when only 12 per cent of the 280-odd series covered by the index were rising and 88 per cent were falling. In December the percentage rising increased to 21 per cent and in January, 1958, to 31 per cent. It remained at about that level until May, when it jumped to 57 per cent.[7] Since then it has stayed in the neighborhood of 70 to 75 per cent.

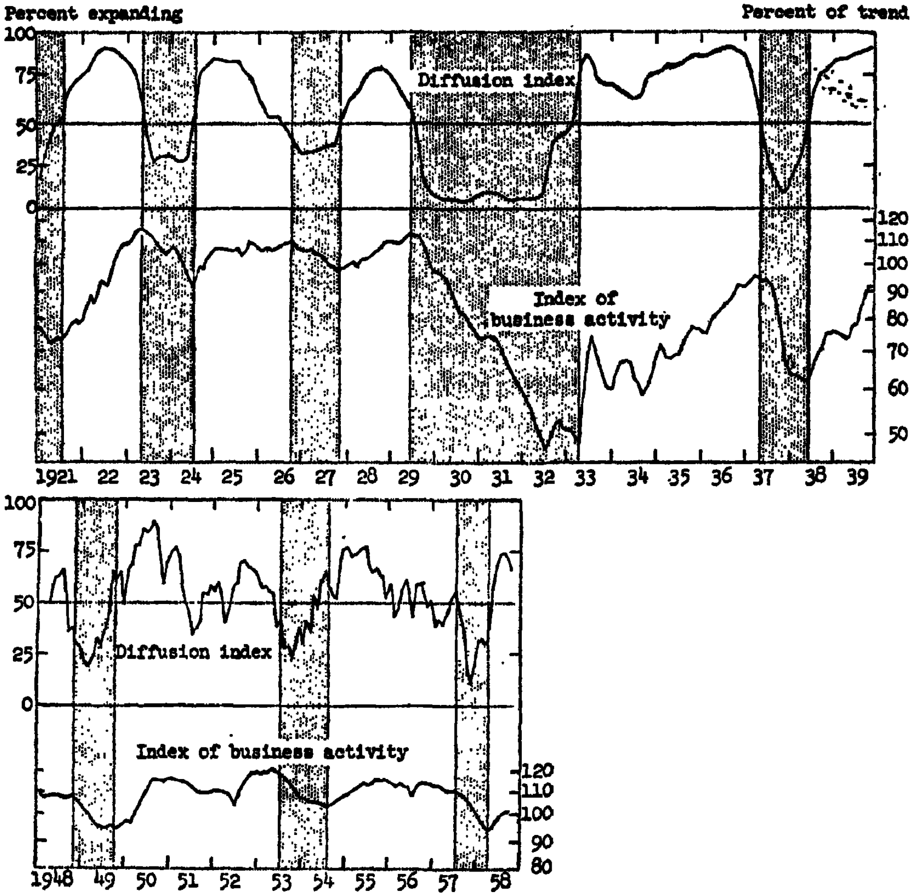
Shift in Composition of Output. One of the typical features of brief business cycle contractions is that a large proportion of the decline in output is attributable to a decline in investment in inventories. At the business cycle peak, usually a portion of output is being devoted to the accumulation of inventories, so that the current rate of output exceeds the volume of sales. Two or three quarters after the peak, inventory liquidation is usually under way, so that output is less than sales. As a result, the decline in output exceeds the decline in sales, often by a wide margin. This was the case in 1957-58 and also in 1953-54 and 1948-49. In each of these brief contractions, the decline in inventory investment exceeded the decline in total final purchases and hence was a dominant

[6] *Measuring Business Cycles* (NBER, 1946), p. 3.

[7] The dates cited accord with the plotting of the chart, which since 1948 is based on directions of change in the component series over three-month spans. E.g., the percentage rising from August to November is plotted in November, the percentage rising from September to December is plotted in December, etc. It should be understood that the figures cited were not available in the months designated, but usually about one month later. For a full description of this index see the paper by Julius Shiskin, "An Experiment with New Measures of Recession and Recovery," presented at the meeting of the American Statistical Association, December, 1958.

CHART II

A COMPREHENSIVE DIFFUSION INDEX AND AN INDEX OF BUSINESS ACTIVITY, 1921-58



Shaded areas represent contractions of business cycles and white areas expansions, according to NBER chronology.

Diffusion index plotted on arithmetic scale; index of business activity plotted on ratio scale.

SOURCE: Diffusion index, 1885-1939, based on 404 economic series, is from G. H. Moore, *Statistical Indicators of Cyclical Revivals and Recessions* (NBER, 1950), pages 14-17. Diffusion index, 1948-58, based on 213-279 economic series, is from Julius Shiskin, "An Experiment with New Measures of Recession and Recovery" (Bureau of the Census, mimeographed, November, 1958), pages 37-39. The 1885-1939 index is not only based on a different sample of series than the later index, but is constructed in such a way that more of the minor fluctuations are ironed out. Index of business activity is published by the Cleveland Trust Company and is adjusted for long-run trend.

factor contributing to the decline in gross national product. Information on this point for earlier contractions is less adequate, but as far as it goes it supports the generalization.[8]

[8] See Moses Abramovitz, *Inventories and Business Cycles* (NBER, 1950), Chap. 21.

Wider relative swings in the output of durable goods than in nondurable goods during business cycles have long been observed. Between July, 1957, and April, 1958, the Federal Reserve index of durable manufactures declined 19 per cent and the index of nondurable manufactures declined 4½ per cent. Between the third quarter of 1957 and the second quarter of 1958, consumer expenditures on durable goods declined 12 per cent and expenditures on nondurable goods increased 0.6 per cent. This recession, like most of its predecessors, dealt its hardest blow at the durable goods producers.

A third type of shift in the composition of output, namely, in the proportions destined for purchase by government or by the private sector of the economy, also reveals a degree of similarity between the 1957-58 contraction and earlier contractions. In four of the five contractions since 1929 (the exception is 1953-54), the decline in output was predominantly a decline in output for the private sector. Government purchases of goods and services rose during the first year of each of the four contractions, thus offsetting part of the decline in the private component. The offset, however, has been much larger in the postwar than in the prewar contractions.

In the first year of the 1929 contraction, only 5 per cent of the decline in gross private product was offset by the rise in government purchases of goods and services. In 1937-38, the offset came to 16 per cent. In 1948-49, using figures for the first four quarters, the offset was 19 per cent. In 1953-54, the decline in private product during the first four quarters was more than offset by the rise in state and local government expenditures, but the decline in federal expenditures exceeded both. In 1957-58, that is, between the third quarter 1957 and the third quarter 1958, the rise in government purchases offset 48 per cent of the decline in private purchases of gross national product. Private purchases declined by 12.8 billion dollars in this interval while government purchases rose by 6.2 billions. More than half of this increase was contributed by state and local expenditures.

The impressive figure for 1957-58, 48 per cent, must be carefully interpreted. Its magnitude is due primarily to the general upward trend in governmental relative to private expenditures rather than to deliberate or automatic countercyclical spending. The greater relative importance of state and local than of federal expenditures as an offset suggests this, among other things. Furthermore, the offsets to the initial declines in private product, i.e., *before* the first year had elapsed, were not nearly so large as those just mentioned. Thus the offset provided by total government purchases in the recent contraction was only 14 per cent in the first quarter after the peak, 11 per cent in the first two quarters, and 19 per cent in the first three quarters. It reached 48 per cent only after four

quarters, by which time the reduction in the private component had already become very much smaller.

Early Decline in Profit Prospects and Investment Commitments. The circumstances attending the onset of the 1957-58 contraction resembled, in certain important respects, those frequently described by writers on business cycles. Mitchell, for example, described the later stages of a business boom as follows:

> The very conditions which make business profitable gradually evolve conditions which threaten a reduction of profits. . . . The decline in supplementary costs per unit ceases; equipment of less than standard efficiency is brought back into use; the price of labor rises while the efficiency of labor falls; the cost of materials, supplies, and wares for resale advances faster than selling prices; discount rates go up at an especially rapid pace, and all the little wastes incidental to the conduct of business enterprises grow steadily larger. . . . In many industries the increase in industrial equipment has been so rapid that the full output can scarcely be marketed at the high prices which must be asked. In the trades engaged in construction work the volume of new contracts declines when the rise in long-term interest discourages borrowing, and when the cost of construction becomes excessive in the eyes of investors. The decline in bank reserves ultimately makes the banks disinclined to expand loans further—a development which diminishes the ability of many enterprises to buy as freely as they had planned. . . .
>
> . . . .
>
> Since these various stresses become more severe the longer prosperity lasts and the more intense it becomes, and since a set-back suffered by any industry necessarily aggravates the stress among others by reducing the market for their products, a reduction in the rate of profits must infallibly occur. But . . . this reduction comes much later in some branches of business than in others, and varies widely in its severity. Even in the same industry different enterprises have exceedingly dissimilar fortunes. . . . Indeed, what quantitative information we possess indicates that in the very last year preceding a crisis a large number, perhaps a majority, of enterprises are still making profits as high as or higher than in any preceding year. But . . . the critical point is reached . . . as soon as a decline of present or prospective profits has occurred in a few leading branches of business and *before that decline has become general.*[8]

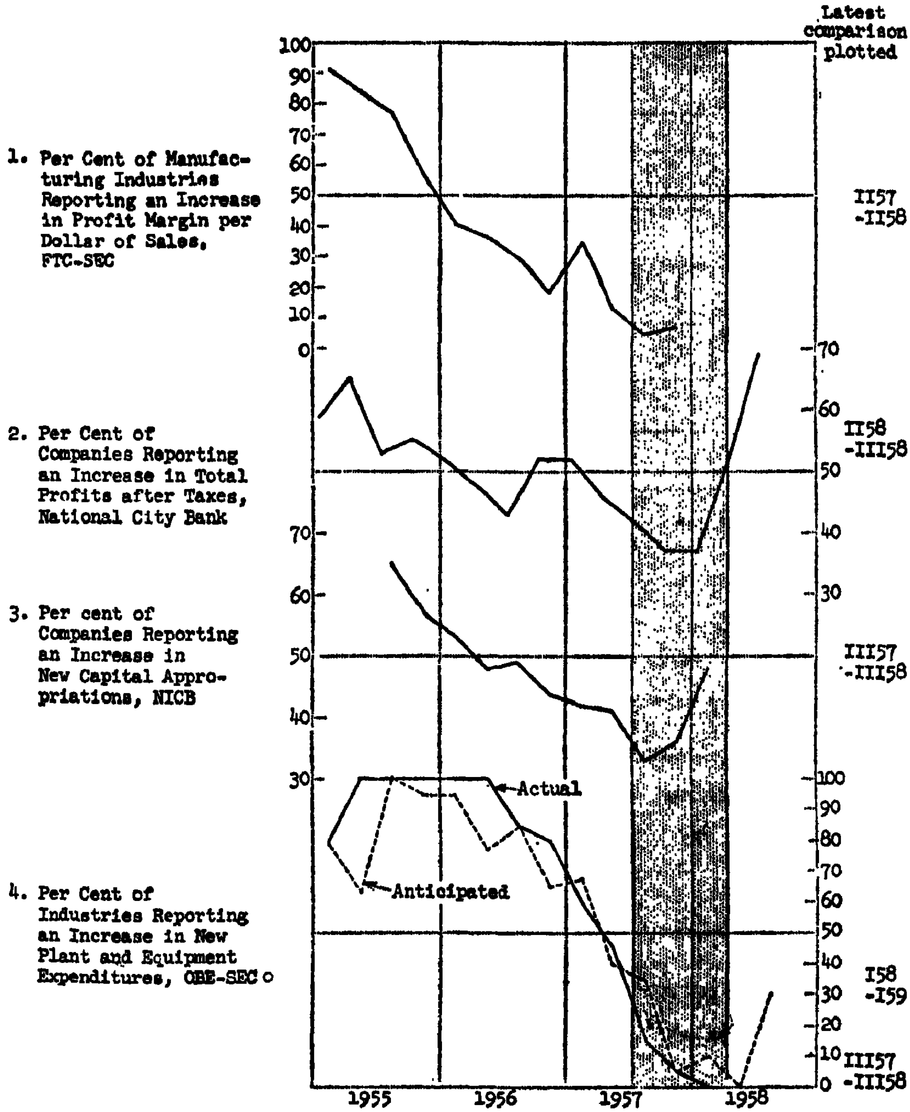
This was written in 1913; yet with minor changes it might be a description of the course of events in 1955 and 1956. Higher overhead, materials, labor, and construction costs; higher interest rates and tight money; plant and equipment expanding amid evidences of excess capacity; a decline in new appropriations and contracts for industrial construction; declining profit margins in an increasing number of industries and declining profits in an increasing number of business enterprises—all were present and most can be accounted for, statistically.

A picture of part of this process is drawn in Chart III. At the beginning of 1955, profit margins per dollar of sales were rising in nearly all manufacturing industries and aggregate profits were rising in a substantial majority of the larger corporations (only firms that publicly report quarterly profits are included in the sample). By 1956 these majorities had become minorities. In 1955 a majority of the larger corporations were increasing their budget appropriations for new capital, and virtually all major industries were increasing their actual and antici-

[8] Wesley C. Mitchell, *Business Cycles*, Part III, pp. 494-495, 502-503 (University of California Press, 1913).

CHART III

DIFFUSION INDEXES OF PROFITS AND CAPITAL INVESTMENT

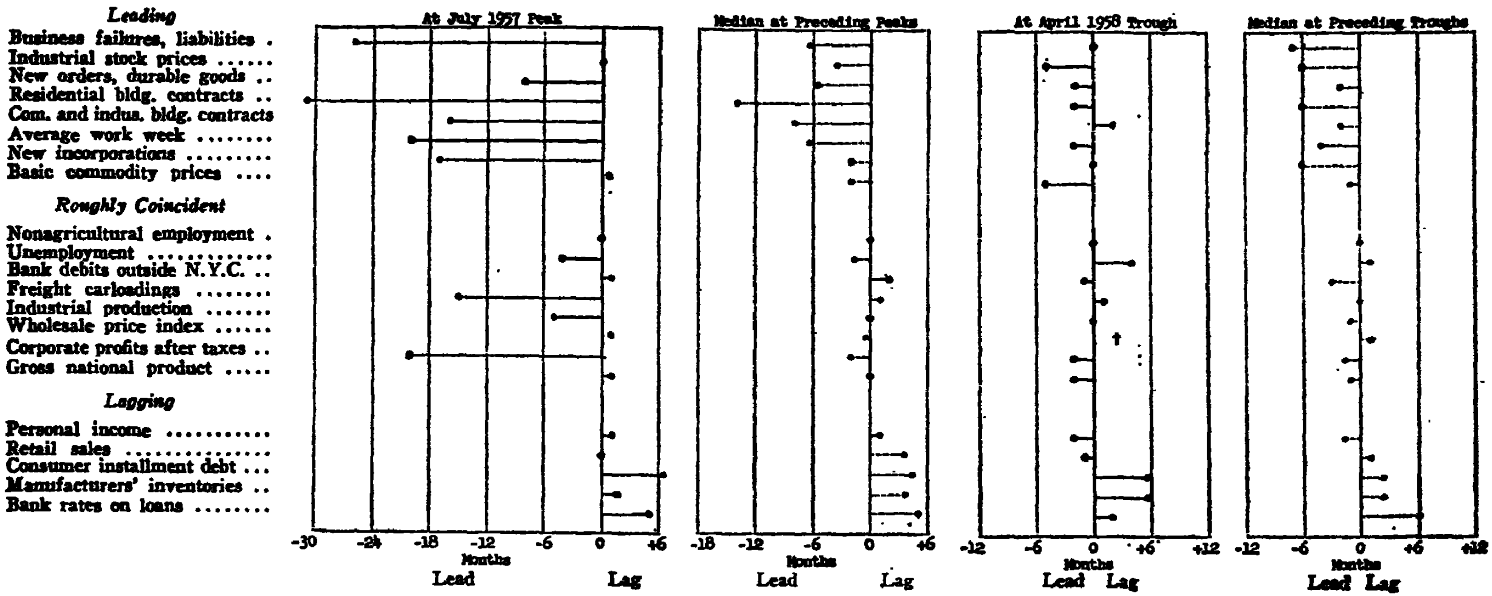


Series 1, 3, and 4 are based on changes over four-quarter intervals, centered in the middle of the interval. Series 2 is based on quarter-to-quarter changes (adjusted for seasonal variation) and is centered in the first month of the second quarter. Shaded area represents business cycle contraction (July, 1957-April, 1958); unshaded areas are expansions.

pated expenditures on new plant and equipment. By 1956 a reduction in new capital appropriations had become the more typical corporate

CHART IV

LEADS AND LAGS AT BUSINESS CYCLE PEAKS AND TROUGHS, TWENTY-ONE INDICATORS



[a] No cyclical peak corresponding to July, 1957.
[b] No cyclical trough corresponding to April, 1958.

policy, though it was not until 1957 that reductions in anticipated or actual expenditures on plant and equipment become widespread.[10]

Other Timing Sequences. Many other timing sequences that have persisted in business cycle downturns of the past reappeared at the 1957 downturn. Chart IV records the timing sequences exhibited by twenty-one economic indicators that were selected in 1950 and classified into leading, roughly coincident, and lagging groups on the basis of their cyclical behavior prior to 1938. The correspondence between the leads and lags of these indicators at the July, 1957, peak and their average (median) timing at preceding business cycle peaks is not close, but it is unmistakable. Six of the eight leading series reached peaks prior to July, 1957, and none later than July, whereas four of the five lagging series reached peaks later than July and none earlier. The lead of corporate profits was exceptionally long. That of freight carloadings was long (fifteen months) but not exceptional in view of the declining trend of rail traffic in recent years (carloadings led by twenty-one months at the 1948 peak, and by thirty-one months at the 1953 peak). The long lead of the average work week in manufacturing industries was unprecedented but needs to be interpreted in light of the fact that manufacturing activity as a whole was the first major sector of the economy to exhibit recessionary tendencies. The peak in manufacturing production was reached in December, 1956, or February, 1957, and in manufacturing employment in December, 1956—seven months before the July, 1957, business cycle peak from which all the leads are measured. The long leads in some of the other indicators that predominantly reflect manufacturing activity also should be interpreted in the light of this fact.

At the upturn in the spring and summer of 1958 the turns in this set of indicators were far more concentrated than at the downturn. The longest lead was five months (stock prices and basic prices) and the longest lag was about the same, making a span of ten or eleven months altogether. The sequences also were less clear. One of the leading indicators (contracts for commercial and industrial construction) lagged at the April, 1958, turn and two were coincident; the rest began to rise two to five months before the turn. Three of the lagging series lagged as usual, but retail store sales led by one month and personal income by two. The lead of personal income was not particularly unusual; leads occurred at six of the eight preceding troughs.

Although the upturns in different aspects of economic activity were

[10] For analyses of the historical record of the cyclical diffusion of profits and the timing of investment commitments and outlays see Arthur F. Burns, "New Facts on Business Cycles," in *Frontiers of Economic Knowledge*, pp. 107-134; Thor Hultgren, *Cyclical Diversities in the Fortunes of Industrial Corporations*, Occasional Paper 32; Wesley C. Mitchell, *What Happens during Business Cycles*, pp. 158-170; Geoffrey H. Moore, "The Diffusion of Business Cycles," in *Economics and the Public Interest*, pp. 35-64.

more concentrated than at the previous business cycle trough in 1954, the degree of concentration was not unprecedented. A similar situation prevailed, for example, at the trough in 1938. Moreover, it would be unrealistic to expect that the sequence among the individual series at any given business cycle turn would closely resemble the average sequence. The sequence at each turn generally varies considerably from the average sequence.

III. *Unusual Features of the 1957-58 Contraction*

Some features of the 1957-58 contraction are unusual in the sense of seldom if ever having been observed before, while other unusual features have antecedents in earlier contractions and merely represent a further secular change in cyclical behavior. Indeed, we have already encountered one example of the latter: the increasing potency of governmental expenditures in offsetting cyclical declines in the private sector. The distinction is important, for secular shifts in cyclical behavior may continue and knowledge of them may help us to analyze subsequent contractions. In what follows we shall try to draw this distinction whenever we can.

Financial Distress. Many of the business cycle contractions of the more remote past were accompanied by severe financial distress, credit liquidation, wholesale cancellation of orders, hoarding, and other manifestations of loss of confidence or even panic. These conditions were either absent in 1957-58 or present on only a moderate scale.

The difference can perhaps be put most plainly by referring again to Mitchell's 1913 account of the cycle. The chapter following the above-cited description of the later stages of prosperity is entitled "Crises." By this term Mitchell meant an acute stage of credit liquidation—a period when banks and other creditors demand repayment of a part of their outstanding loans and are reluctant to grant new ones. Sometimes the crisis was accompanied by a panic, bankruptcy of some conspicuous enterprise, or a run on the banks. At other times the crisis was simply a period of severe financial strain which eased gradually into a depression.

Despite the fact that, as pointed out earlier, developments immediately before the 1957-58 contraction were similar in many respects to those that Michell described as culminating in a crisis, the consequences were different. The improvements in our financial structure that provide some insurance against disasters of this sort are well known. Some of the insurance is provided by institutional changes outside the financial area.

There is, of course, no guarantee in these safeguards that a credit crisis will never occur again. If, through speculation or relaxation of

credit standards, a serious deterioration in the quality of credit should develop, as happened in the twenties, a drastic credit liquidation might ensue. Most of the new countercyclical weapons are either not designed to or are not so likely to be employed to prevent the excesses in the granting of credits that can develop during a boom. Nevertheless, the 1957-58 contraction provided the severest test in the postwar period of the effectiveness of our safeguards against financial collapse, and the results were encouraging.

Stability of Personal Income. A second and not unrelated feature of the 1957-58 contraction was the impressive stability of total personal income in face of the sharp drop in production, employment, and profits. Relative to these declines, the stability in income was unprecedented, but it was nevertheless the manifestation of a trend. Income declined about 1 per cent during the nine-month business cycle contraction of July, 1957-April, 1958. This small decline was only about a fourth as large as the declines in gross national product or in nonagricultural employment, less than a tenth as large as the decline in industrial production, and only 3 per cent as large as the decline in corporate profits. In the first nine months of the contraction that began in 1929, the percentage decline in personal income exceeded those in GNP and employment, was half as large as the decline in industrial production, and nearly one-sixth as large as the reduction in corporate profits. In each successive contraction between 1929 and 1957, the drop in personal income during the first nine months became progressively smaller relative to those in production, employment, and profits. The factors that appear to be primarily responsible for this are: the declining relative importance of farm income and its insulation from recession in recent years, the growing importance of government payrolls and their insulation from recession, and the rising relative magnitude and countercyclical behavior of transfer payments, mainly unemployment compensation payments.[11]

The personal income figures we have been discussing are before taxes. On an after tax basis, that is, in terms of disposable income, the trend

[11] These effects can be demonstrated by a hypothetical calculation of what the decline in total personal income would have come to in any given contraction if the percentage changes in each component were unaltered but the relative size of each component shifted as it has in the course of time. For example, in the 1937-38 contraction, personal income declined 7.7 per cent, on an annual basis. If the composition of income had been as it was in 1953, when farm income was a smaller fraction of the total and government payrolls and transfer payments much larger fractions, the decline would have been 5.6 per cent. By 1957, the decline would have been 5.3 per cent. Thus in effect the shift in the sources of personal income that has taken place in the past twenty years would have moderated the decline in the total by nearly a third, other things remaining the same. A similar calculation based on the 1948-49 experience shows that the 1 per cent decline in personal income (annual figures) in that contraction would have been a 1 per cent increase if the composition had been what it was in 1957. Both calculations take into account shifts in other components of income besides farm income, government payrolls, and transfer payments. For further details see my introduction to Daniel Creamer's *Personal Income during Business Cycles* (NBER, 1956), pp. xxviii-xxxi.

towards greater stability during business cycle contractions has been even more marked. One would expect, then, that this stability would have a substantial effect on the behavior of consumer expenditures, as well as a less readily measurable effect on the business cycle itself. Consumer spending does appear to have become decidedly more stable relative to declines in output and employment, and it seems likely that income stability has been a factor in this. Further study of the components of expenditure and their relation to declines in income and to changes in the use of credit is necessary before one could be confident about this, however.

Prices; Wages; Monetary Policy; Foreign Trade. At the end of the contraction the consumers' price index was about 2½ per cent above its level when the contraction began. Aside from the brief business contractions of 1919 and 1945, when consumer prices also rose substantially, this was the first recession since World War I to witness such an increase. The increases were concentrated among foods and services; prices of apparel and household goods held steady or declined slightly. The total index itself began to level off at about the time the business contraction ended, i.e., in March or April, 1958, especially if allowance is made for some slight seasonal movements. Wholesale commodity prices, again with the exception of foodstuffs, responded more perceptibly and promptly to the recession, but the total index excluding farm products and foods did not drop more than a fraction of 1 per cent below its level when the recession began. A similar stability prevailed in the 1953-54 recession, but in most earlier recessions reductions in wholesale prices were larger and more widespread. Allowance should, of course, be made for the brevity and moderate severity of the 1957-58 contraction, as well as for the changing composition of most of the available price indexes and the ways in which actual prices may differ from reported prices. The subject warrants further study, but a trend towards increasing stability or stickiness of prices during recession both at retail and at wholesale seems to be developing. In this respect the farm price support program bears a share of responsibility.

The 1957-58 recession caused virtually no slackening in the rate of advance in hourly rates of pay. The rate of increase in average hourly earnings in manufacturing as a whole did diminish somewhat, but this is largely accounted for by reductions in the amount of time paid for at overtime rates and in employment in the more highly paid durable goods industries. During the thirty-five month period of business expansion from August, 1954, to July, 1957, straight-time hourly earnings rose twenty-nine cents in durable goods manufacturing industries and twenty-three cents in nondurable industries. During the next nine months of business contraction, a period about one-fourth as long, the

increases were almost precisely one-fourth as great: seven cents and six cents per hour, respectively. Increases in hourly wages during brief and moderate recessions are somewhat less unusual, historically, than increases in consumer prices. Yet here, too, there is evidence of a larger degree of insulation from the pressures that accompany a contraction in business activity, in part because of the greater prevalence of long-term union contracts with built-in wage improvement factors and escalator clauses.

If the prices of commodities, services, and labor are becoming more immune to recession, that does not appear to be true of the price of money. The reversal in monetary policy in the autumn of 1957 helped to bring interest rates down farther in the same period of time than in any recession since the Federal Reserve System was established. The free reserves of member banks rose in the first nine months of recession by larger dollar amounts than in any of the five preceding recessions for which figures are available. The money supply decreased sharply at first but by April, 1958, was increasing at a faster rate than at the corresponding point (ninth month after the peak) in any of the contractions since 1920.

The behavior of foreign trade also was unusual. Imports declined irregularly, but the decline was smaller than in the corresponding periods of most of the preceding seven contractions. Exports, on the other hand, dropped more sharply than in most of the preceding recessions. As a result, the drop in exports greatly exceeded the decline in imports. This had happened in none of the preceding seven contractions. It caused a drop of three billion dollars (annual rate) in net exports in the GNP accounts between the third quarter of 1957 and the second quarter of 1958—again an unprecedented decline for the first nine months of a business cycle contraction.

IV. *Historical Perspective and Its Pitfalls*

Though the differences are important, the similarities between the 1957-58 contraction and its predecessors are sufficient to demonstrate that business cycle phenomena continue to exert a profound influence upon our economy. Accordingly, what has been learned in the past about such phenomena can usefully be applied to the present and the future. There is need, however, to guard against oversimplification in the use of historical perspective. Comparisons of this recession with the other two postwar recessions became so popular during the past year that a few warnings would seem to be in order. With suitable changes in wording, they apply to recoveries as well as recessions.

First, do not confine comparisons to the immediately preceding recession or even the last two. There is too much variability in these

phenomena for a sample of one or of two observations to be very helpful—though one or two is better than none. For many years after the Great Depression, that catastrophe became the prototype with which all recessions were compared. More recently, the 1953-54 contraction became a sort of standard of comparison. These two are at opposite poles as far as duration, severity, and most other respects are concerned. There is no particular reason for subsequent contractions to be like either one.

Second, do not confine comparisons to an average of preceding cycles. Surely an average is better than a single observation. But again there are wide variations about averages of cyclical behavior. When these variations reflect progressive changes, as we noted in some instances above, it is essential to take them into account. Even when they do not, they are instructive.

Third, be aware that current developments can fall outside the range of previous experience, but use that range as a guide to help avoid the biases we are all heir to. Many of the forecasts of the 1954-55 recovery, for example, fell far below the range of previous experience. A similarly conservative tendency appears to characterize many of the forecasts that have been made about the current recovery. Conservatism is a fine thing, and so is optimism. Both should be tempered by experience.

THE PROBLEM OF PRICE STABILIZATION: A PROGRESS REPORT

By John P. Lewis
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When I began planning these remarks, I thought it might be useful to attempt a rather broad-stroke report of the profession's recent progress in attacking the price stability problem, one that would both reflect recent analytical accomplishments and suggest any new focus toward which the debate might be expected to move next.

The occasion for such a progress report is clear enough. American economists have been prolific in their discussions of price stabilization during the past two or three years, and especially in the year just ending. In 1958 the Joint Economic Committee has been the leading impresario of such activity, first publishing a "compendium" of papers by some forty-seven academic contributors, then holding hearings for them, then publishing "commentaries" on the compendium by fifteen business and labor union economists, and, finally, just last week, holding new hearings for these latter people plus some of the academicians again.[1] But there also has been an outpouring of commentary on the matter of general price behavior through other media and under other auspices.

It strikes me that all of this recent analytical produce does mark some real progress toward an agreed view of the general pricing process and toward a consensus as to price-level prospects under existing institutional arrangements. At least we have begun to surmount some of the analytical crudities that were common just two or three years ago. For example, you find few of the contributors to the Joint Committee compendium talking as though so-called "cost-push" inflation could be hermetically sealed off from demand influences. Conversely, you find fewer than would have been the case a few years back taking the equally bizarre position that general inflation is entirely a demand phenomenon. While it is too early to assert a diagnostic and prognostic consensus, one can detect in the writings of the past year an emerging middle view of the pricing process that many of us feel is reasonably balanced and sensible.

On the other hand, most of the recent analyses have been extraor-

[1] Joint Economic Committee, 85th Cong., 2d Sess., *The Relationship of Prices to Economic Stability and Growth: A Compendium of Papers Submitted by a Panel of Economists*, Mar., 1958; *Hearings*, May 12-22, 1958; *Commentaries Submitted by Economists from Labor and Industry*, Oct. 31, 1958; *Hearings*, Dec. 15-18, 1958.

dinarily diffident about tackling some of the policy issues that much of our diagnosis and prediction so plainly raise. Many of us have concluded that general monetary and fiscal restraints upon aggregate demand are neither sufficient nor entirely appropriate for resisting the kind of inflation that we have experienced during the past four years and expect to see continue. Our analysis implies a need for policies that will affect demand more selectively and for others that somehow will modify the consequences of contemporary wage-making and price-making practice. Yet we have made little concerted effort to suggest what the nature of these policies might be.

These gaps in our discussion of price stabilization policy stem partly, no doubt, just from the fact that we have been doing first things first. Diagnosis and prognosis logically precede prescription, and they have been claiming most of our analytical effort. Another reason for our diffidence about policy may be that any talk of normal peacetime reforms of present price and wage making immediately carries us into unfamiliar, forbidding terrain. It requires us to grope for devices for which there really is very little relevant American precedent. As a result we pose ourselves excessively stark, simple alternatives.

Whatever the reasons, the present situation seems to invite a progress report which, first, summarizes "the emerging middle view" of general price behavior and prospects that I have alleged and then, second, dwells upon some of the policy implications of this view as ones that deserve a much greater share of our analytical energies than they have lately received. This remains the intended format for the paper. However, in the course of writing it, I have become less and less sure that what I shall say represents an even incipient consensus. Most of you will part company with me somewhere along the line. But even where we disagree I hope the sequence of the argument may provide some useful structuring of the issues.

I

The essence of my diagnostic and prognostic position is that the problem of price stability in the United States is a real one and probably substantial enough to invite the mounting of new policies. But it is by no means so desperate or urgent as is often alleged. It is emphatically not the most critical national problem of our time.

I find it helpful to think of the charges against contemporary American pricing practice as breaking down into a four-count indictment.

It is alleged, first and most familiarly, that the product price level has acquired a secular inflationary bias. The key contention here is that we have accumulated a set of institutional arrangements that make it easier for prices and wages to go up than to go down—arrange-

ments that, in concert, constitute a massive cost-price escalator that usually is deliberate but also one-directional in its movements.

It is alleged, second, however, that if our future does contain such a bias toward "creeping inflation," the inflation cannot for long be kept to a creep. As buyers' expectations become more and more adjusted to the prospect of continuing price increases, the pace of inflation is bound to accelerate until it causes unsustainable rates of fixed asset accumulation or disrupts the whole fabric of monetized exchange and one way or another brings disaster.

It is alleged, third, that American pricing practice has been yielding a distribution of income between households and business that threatens the maintenance of long-run economic growth. Put another way, the contention is that our secular pattern of productivity-gains distribution is not conducive to a balanced expansion of aggregate capacity and aggregate demand.

It is alleged finally—note that I am confining this list to charges that bear directly on the matter of stability—that the inflexibility of many wages and prices aggravates short-run fluctuations in output and employment.

For purposes of stabilization policy planning, it seems to me that the last two counts in this indictment can be safely rejected. As I have tried to argue elsewhere,[2] there is no plain or convincing evidence of any growth-inhibiting distribution of productivity gains during the past three decades in the United States. It is true that the distribution which has occurred has been associated with a rising rather than a stable price level. But this does not necessarily imply the kind of distortion of income shares that would lead either to a long-term spoilage of consumer markets or a long-term attrition of the inducement to invest.

As for short-run fluctuations, the idea that more flexible prices and wages would facilitate recession-forestalling adjustments implicitly conflicts with the dominant stabilization strategy that we have been pursuing in the United States for the past twenty-five years—pursuing often inadvertently but nevertheless with remarkable success. The essence of that strategy is not to keep the several sectors of demand marching in unerring quarter-to-quarter balance but rather to weaken the interdependencies among the sectors—in other words, to dampen the various cumulative mechanisms that used to spread deflationary infections. Above all, the strategy has been to increase the cushioning that protects disposable personal income against temporary declines in gross business revenues.

[2] J. P. Lewis, "Pricing for Stability and Growth," in *The Relationship of Prices to Economic Stability and Growth, op. cit.* Also *Business Conditions Analysis* (McGraw-Hill, 1959), Chap. 25.

The very wage and price inflexibilities that some people complain about have contributed importantly to this dampening of the deflationary cumulators. Wage stickiness helps insulate consumer incomes from temporary declines in business revenues, and price stickiness offers substantial protection against that most vicious engine of cumulative deflation—the undisciplined, speculative downspiral in commodity prices. Thus the impact of contemporary pricing practice on short-term fluctuations is not just, for the most part, unobjectionable; it is positively benign, provided we are willing to settle for the limited goal of a semi-compartmentalized economy in which downturns do occur but seldom get out of hand because they do not snowball easily.

If the price policy planner decides not to agitate himself about the last two counts in the indictment I have outlined, he is left with the charges, first, that the system has acquired a secular inflationary bias and, second, that continuing gradual inflation cannot be kept gradual.

II

As a hypothesis widely entertained among American economists, the inflationary bias charge is, perhaps, fifteen years old. It was originated by theorists who thought they detected, in certain institutional changes then occurring and in others already extant, the makings of a change of course in our average peacetime price behavior. Historically, except during war and war-related periods, the American economy had been distinguished by its lack of inflationary propensities. But the inflationary bias theorists noted that the federal government's new commitment to support aggregated demand would, if it could be made good, eliminate what had been the chief anti-inflationary expedients in the old system; namely, good resounding busts every now and then so severe that they eventually brought prices as well as output and employment tumbling down. The theorists noted, too, that we had acquired a collection of cost and market structures, wage-setting institutions, business pricing practices, and government price supporting and regulating policies that contributed a ratchet effect to most wage and many price movements; that caused particular cost increases to spread and reverberate throughout the price structure; and that made it the normal disposition of the price level to rise gradually whenever the economy was in the remote vicinity of full employment.

Observe that the core of the inflationary bias hypothesis involves no particular fear of excessive demand—unless one is also prepared to say that enough spending to permit reasonably high levels of employment and of output relative to capacity is too much. The core of the complaint, technically speaking, is with the shape of the short-run

aggregate supply function in the United States and with the tendency for increases in factor prices to shift the function upward faster than productivity and capacity increases can stretch it out and shift it downward.

The only prudent assumption for American public policy planners, in my judgment, is that our future *will* exhibit an inflationary bias of this kind, unless substantial new offsets are contrived. Since this is one aspect of my diagnostic and prognostic position that I am sure does represent something approaching a consensus, I shall not take the time to substantiate it further, except to say a word about the relationship of the 1955-58 inflation to this secular inflation forecast.

A few years ago some of us were taking others to task for reading too many long-run implications out of the economy's generally stable price-level behavior during the years 1951-54. Now we may appear to be extrapolating from another episode with equal abandon. The point, however, is that the secular inflation forecast in no sense rests exclusively on the events of 1955-58. The forecast, as I have said, was formulated long before 1955 as a hypothesis about certain underlying changes that were occurring beneath the surface of such transitory phenomena as the post-World War II and Korean war booms. The four years just ending were important to the hypothesis only as the first reasonably normal, nonwar-affected testing period that it encountered. But in this sense, of course, they were extremely important.

Certainly not all of the forces that pushed up prices during 1955-58 need be projected to the future. Probably this is true of the farm sector and perhaps also of the disproportionate rise in plant and equipment outlays, which was large enough to create powerful demand pulls on prices in selected commodity areas. Perhaps, too, we should count as an unusual inflationary stimulus the fact that in 1956 and 1957 rising output per man-hour did not provide as robust an offset to rising costs as we have a right to hope for over the long-run future.

However, much of the sluggishness in aggregate productivity gains in 1956 and 1957 can be laid to the failure of demand to rise strongly enough to keep output up to expanding capacity levels. Surely slight lapses in demand are not going to be unknown in the future, and neither will be the appearance in every boom of some front-running sector, whether plant and equipment or some other.

On balance, it is hard to see how the events of the past four years can be interpreted as anything but a partial corroboration of the inflationary bias thesis. Never once during the whole period did total demand crowd the economy's comfortable full employment capacity noticeably. Except in a few hard goods areas, there were no evident short-

ages. Demand began to sag away from capacity after late 1956, partly as a result of the most austere central bank policies in two decades. And yet consumer prices rose at an annual rate of almost 4 per cent.

Moreover, most of the mechanisms that, it is claimed, tilt and shift the aggregate supply function upward—most of the mechanisms, that is to say, of what Gardner Ackley has aptly called "markup" inflation—were visibly operative. We got a particularly good look at one of the more subtle of them; namely, the manner in which wage patterns set in relatively progressive industries can spread to service industries where the indigenous productivity gains are much smaller, and thereby indirectly cause sharp rises in service prices.

The short of it is that, while most of us would not project the whole 1955-58 rate of inflation as chronic, we do project a goodly portion of it as more likely than not to occur in any normally prosperous year, thanks to the nature of contemporary pricing practice.

III

A persisting inflation of this pace is a highly unpleasant prospect. It would be inequitable to some income groups. It would be rough on holders of fixed-dollar assets and, in the long run, even rougher on the savings institutions. If state and local tax systems are not overhauled, it could cause a progressive erosion of public services. But whether an inflationary bias is to be regarded as anything like a mortal danger to the economy depends upon one's assessment of the remaining count in the indictment; namely, that a plodding inflation, as it more and more impresses itself on buyers' expectations, must eventually become violent.

On this count the alarmist's posture seems like the responsible, tough-minded one. More and more, however, I am drawn to Professor Slichter's conclusion that we are conjuring up unnecessary nightmares when we take this line. It is hard to imagine consumers stock piling as hedges against inflation second houses or second automobiles that they did not otherwise want. Moreover, it would appear that, for a rational business management to buy capital goods sooner than its forecast of future product demand warrants, it must anticipate an annual rate of inflation in capital goods prices that would exceed the costs of holding the assets in an unproductive state. There would include the cost of money plus warehousing plus any physical deterioration or technological obsolescence in the premature purchases. While it is true that investors are not entirely rational, I suspect that the expected rate of secular inflation would have to rise to well over 5 per cent a year before it triggered very much anticipatory commodity buying by either business or

consumers. And even then this result might be forestalled if the economy continued to produce abundantly, if the monetary authorities did not abdicate, and if higher interest rates accompanied the faster price rises.

A continuing 2 or 3 per cent a year inflation could, unquestionably have radical consequences for the financial community, since shifts from savings instruments into equity securities do not entail major increases in holding costs. Likewise, it could bid up land prices, strengthen the trend toward owner-occupied housing, and require new arrangements for placing the public debt. But, while most of these would be unwanted developments, they would not necessarily force an acceleration in the commodity price inflation or disrupt long-term growth.

IV

My net impression, then, is that the problem of price stabilization invites cooler heads and lower blood pressures than we often bring to it. The only plainly disturbing characteristic of the existing pricing system is its penchant for moderate inflation. This, to be sure, is a major fault and, like the smog in Los Angeles, certainly should be eliminated forthwith if the elimination were costless. But since the problems they confront are deeply intertwined with mostly desirable growth and development processes, neither anti-smog nor anti-inflation programs are free goods. The particular features of such programs should be adopted only after a circumspect weighing of their advantages against their costs. Moreover, we probably do have the necessary time for policy experimentation and for a step-by-step evolution of answers. Gradual inflation is not a delayed-action bomb, due to explode in our faces at any moment. The situation really is not that desperate.

However, it would be misguided to think—and this is the essence of my position on policy—that any of the foregoing excuses us from pressing the search for workable anti-inflationary policies aggressively and imaginatively. If my plea is that we be sensibly moderate in our diagnosis of the price stabilization problem, it is, equally, that we avoid doctrinaire postures concerning price stabilization policy. Clearly it should be one of our continuing objectives—not a life-and-death goal, but a major one—to devise an effective anti-inflationary program that does not cost too much. And, clearly, in pursuing that objective it would be naïvely doctrinaire to assume that any tampering of any kind with existing price- and wage-making arrangements would necessarily involve a basic rejection of the market mechanism or a basic change in our philosophy of government. Present pricing practice already is an

amalgam of many institutional effects, some private and some public, some old and some new, and there is no reason to decide suddenly that further tinkering is impossible or would be calamitous.

I want to devote most of my remaining time to development of this theme, since I am persuaded that nothing short of some government-contrived or government-stimulated changes in private pricing practice is likely to stop secular inflation. But first, in order to keep the logic of the position clear, I must mention certain alternative types of policy which, some suggest, could solve the problem without getting government into the business of reforming private price and wage making.

The most familiar of such proposals are those which would trade losses of output and employment for greater price stability. Accepting our aggregate supply function as inviolable, such proposals would lower aggregate demand sufficiently to yield a higher average amount of underproduction and unemployment and a lower average amount of inflation. In its purest and most extreme form, this approach has been advocated by Professor Mints, who would write an absolute commitment to price-level stability preferably into the laws of nature, as a second choice into the Constitution of the United States, or as a third choice, indelibly into the minds of a board of central bankers who were fully insulated from the political panderings of the populace. With this done, producers who objected to underproduction and unemployment would finally come to see that the fault lay nowhere but in their own wage-making and price-making practices. And they could jolly well reform themselves if they wanted more employment and production badly enough.[3]

In the world of affairs, a willingness to sacrifice production and employment to the cause of price stability has been demonstrated by the Board of Governors of the Federal Reserve System, especially during the middle quarters of 1957. And lately the principle has won an unexpected recruit in the person of Professor Galbraith. Mr. Galbraith, convinced that our continued preoccupation with production is a species of cultural lag, thinks we might do well to sacrifice some output, provided we also moderate the inequities of unemployment by paying larger and more enduring unemployment benefits.[4]

It is my assumption that no workable anti-inflationary program can be premised on any such employment-sacrificing scheme. Many of us would challenge the wisdom of swapping output for price stability in the short run, even if it were feasible, especially since the impact on capacity expansion and improvement may actually aggravate inflation in the longer run. One can also challenge the effectiveness of the em-

[3] L. W. Mints, *Monetary Policy for a Competitive Society* (McGraw-Hill, 1950).
[4] J. K. Galbraith, *The Affluent Society* (Houghton Mifflin, 1958).

ployment-sacrificing approach on the ground that output may have to be throttled back to very low levels indeed before general demand restraints will do the anti-inflation job.

But the decisive objection to these schemes is simply that they are utterly unrealistic politically. The American electorate has a far greater distaste for moderate unemployment than for moderate inflation, and no amount of propaganda or education is going to persuade it otherwise in the foreseeable future—this I think stabilization policy planners should accept as a political axiom. It is one that this year's elections have tended to confirm and that no sweetening-up of unemployment benefits is apt to dislodge.

There are two other types of policy proposals for dampening the economy's inflationary bias without altering present pricing practice. One asks for a greater use of selective demand restraints in boom periods—such devices, for example, as consumer credit controls and variable depreciation allowances. The other proposal, particularly espoused by Ruth Mack in the Joint Committee Compendium, is that the U.S. goverment take steps to insulate domestic purchasers from some of the present gyrations in international raw materials prices. This might be accomplished in part by international agreement, in part by extending the stock-piling device to nonstrategic as well as strategic commodities and then deliberately operating it as a supply-smoothing mechanism.

Both of these ideas have merit. Although their implementation would not be easy, both probably deserve a place in any rounded program of long-term anti-inflationary policy. But let me do them less than justice and remark simply that they cannot possibly solve the whole secular inflation problem. The core of that problem is the vast, lumbering, one-way cost-price escalator into which many of our price-setting institutions have inadvertently joined. Selective demand regulation and a smoothing of the fluctuations in raw materials prices can, if well administered, reduce total inflation by diminishing the actuating impulses that this mechanism receives. But they would not eliminate all such impulses—for example, those supplied by wage increases in excess of productivity gains. And they would do nothing to check the internal momentum of the markup system.

Accordingly, I am brought to the view that over the years ahead, during which we will have time to experiment with a variety of antidotes to the limited but substantial problem of secular inflation, the main thrust of those public policy planners who grapple effectively with the problem without planning themselves out of office will be to contrive workable reforms in many of the procedures and/or institutions through which American wages and prices are now set. If the

heart of our inflationary problem is the shape and behavior of the aggregate supply function, the heart of an effective anti-inflationary policy must be an attack on some of the function's institutional determinants.

V

This paper will not arrive at any firm recommendations for specific pricing reforms. But one can assert certain propositions that may help box in the territory in which workable answers will be found.

One is that we are not wrestling with sin. The cost-price escalator is not a contrivance of evil doers; it is the accidental result of the interaction of a collection of practices and procedures, each of which is perfectly honorable and reasonable when examined in its own setting. The situation might be easier to deal with if there were a villain in the piece, but there is none. If we could once establish this point, it might stop our silly game of trying to pin all of the original inflationary sin on labor, or upon corporate management, or on some other single culprit.

A second proposition is that labor and management are most unlikely, on their own, to eliminate the inflationary bias from their pricing practices without some government intervention. This is not a cynical position. Personally, I am convinced that the alleged spread of socially responsible attitudes through the business and labor communities is a perfectly real phenomenon and, indeed, that there would be no hope of preventing secular inflation if private decision-makers were not becoming increasingly receptive to changes proposed in the public interest. But government is at least going to have to serve as a catalyst. Not only are there few guilt complexes to prompt autonomous private action; to expect the individual firm or union to practice unusual self-restraint unilaterally is to expect it to trade direct and tangible benefits for social benefits so diffused as to be little more than theoretical.[5]

The third proposition is that there is no need for government policy planners to approach the problem of pricing practice on the ideological defensive. The idea of free markets and decentralized decision making is not the only strain in American ideology, and, in any event, there are a number of conceivable changes in public price policy that

[5] Moreover, there is little prospect that bilateral labor-management co-operation—or bargaining—can arrest secular inflation without the assistance of a third party. The Joint Committee's recent collection of papers by business and labor economists provides rather melancholy evidence that even such skilled and sophisticated groups of partisan representatives as these still cannot, when they are confronting each other, argue the problem of inflation in other than extremely partisan terms. Furthermore, if a fully harmonious collaboration should develop between labor and management in particular pricing jurisdictions, it is quite possible that its effect would be to accelerate rather than retard the advance in product prices.

would do it no more violence than it already has been done. An equally classic strain in our traditions is that of popular sovereignty, according to which any decision making with evident and widespread impact upon the popular welfare must be held explicitly responsible to the public through some accepted accountability mechanism. Seen in this light, the worst loose ends in our social fabric presently are the heavy concentrations of economic power in the hands of private producers who, if they are no longer subject to the rigorous discipline of an impersonal market mechanism, are not really adequately responsible to any one.

I say this, not in the mood of a pamphleteer, but only to note that our key private decision-makers are in a fundamentally exposed position ideologically, and that the more sophisticated of them well know it. Accordingly I suspect that they may be potentially more receptive than is commonly supposed to experiments that would improve and formalize their accountability to the public.

A fourth proposition, however, is that the worst folly for government would be to overestimate its political resources for enforcing reforms in normal peacetime pricing practices. Since the producer groups are political as well as economic power centers, the government is in some respects an agent confronting its political superiors. It cannot force large segments of business and labor into courses of action they strenuously resist. It can create considerable pressure on private policies, partly by exploiting skillfully private decision-makers' own concern for the public interest. But it can destroy this opportunity by overreaching its hand.

While these very broad propositions do not drive us to any specific policy prescriptions, I suspect they mean that the more promising anti-inflationary innovations in peacetime public price policy will turn out to be ones that cast the government in something less than an authoritative, command role but that, on the other hand, do very pointedly inject government advice into key pricing and wage-setting determinations well in advance of the times specific decisions jell.

Rather plainly, a peacetime reincarnation of price and wage controls on the wartime model would be politically unthinkable as well as technically unworkable. I am almost equally convinced that it would not make such controls more feasible in nonemergency circumstances to put them on a stand-by basis. There would be the enormous difficulty of keeping a dormant regulatory apparatus in an adequate state of repair. It is almost impossible to imagine, in either administrative or legal terms, a procedure under which such controls could be activated efficiently under nonemergency circumstances. And they would scarcely fit the problem of gradual inflation anyway.

Among the other visible alternatives, any scheme to generalize the traditional commission-court system of utility rate regulation would be as deplorable as it is improbable. And, although many do not join me in this, I do not have much hope for intensified antitrust activity as a solution to creeping inflation. I suspect it would require a much greater fragmentation of firms—and of unions—than is politically conceivable to break labor and management loose from conventional pricing practices. Moreover, even if we could achieve such a fragmentation, I am not sure that it would not weaken our present defenses against deflationary price and wage spirals too much.

Suggestions that the solution may be some kind of national wage bargaining, with the government either merely convening the sessions or actually participating in three-cornered bargaining, likewise do not seem very promising. While such negotiations probably would do no harm, some of the crucial mechanics remain very obscure—notably the means by which bargains struck about average national wage and price behavior would be reflected in specific wage and price determinations.

If all of those impressions should be correct, only moral suasion would seem to be left as a feasible avenue for pricing practice reform, and this, you may say, is precious little. However, the federal government has never yet scratched the surface of its potentialities for developing effective consultative relationships with key wage- and price-makers. The very limited ventures of both the Truman and Eisenhower Administrations in this field have been abortive for good reason. The government's pricing advice usually has been broadcast in so diffused a fashion that every intended addressee has been free to conclude that the government really did not mean him. Where the advice has been beamed on particular pricing and wage-making jurisdictions, it almost invariably has been rendered after a complex corporate or collective bargaining decision already had jelled, when there was no chance at all of undoing it. And the advice has always taken the form of *ad hoc* gratuitous kibitzing; it never has been the product of a routine consultative arrangement and the government never has been able to speak with the factual authority that a permanent staff of specialized industry observers would give it.

There is, I suspect, plenty of scope for experimenting fruitfully with advisory arrangements that would avoid these errors. They would have considerable promise if they did no more than produce in some major pricing jurisdictions respected impartial views of certain factual issues—notably the pace and magnitude of productivity gains in particular industries. If it became apparent that the purpose of such an operation were less to ferret out wrongdoing than it was to interpret and partic-

ularize the public interest to responsible business and labor leaders, it conceivably could gradually win broad acceptance on a wholly voluntary basis. But government also may have the political resources for compelling acceptance of such an advisory function. As devices for this purpose, it may be about time, for example, to get serious about Senator O'Mahoney's perennial suggestion of a federal incorporation statute for major interstate enterprises and likewise to make union access to the benefits of federal labor legislation contingent upon acceptance of orderly consultation procedures. Surely it is high time to make government itself a more alert defender against inflationary pricing practice in its massive role as a buyer.

There is no need at all, in short, to assume that, eventually, an alert government in co-operation with intelligent private group leaders cannot work out a reasonably palatable and satisfactory solution to the problem of secular inflation—no more reason than there is to believe that the problem is going to explode in our faces while they are working. But it is going to take a willingness to experiment in a relatively unexplored policy area, plus a good deal of skill at designing innovations to fit the institutional realities of the situation.

This last—to return, finally, to one of my original points—is the dimension in which economists' recent treatment of the price stabilization problem has been thin. In addition to the reasons mentioned earlier, this may be because domestic institutional studies have lost caste within the profession during the past two decades. This has been a great and rewarding era of quantification, but it has not been costless. I suspect that lately fewer of the best minds amongst us than was the case in the thirties have been deeply engaged in examining the economy of power in American society, and that our overlap with political science, law, and sociology has been relatively neglected. If this is so, it needs correcting. In the field of price stabilization, at least, I am sure that we need to bring a new zest to the matter of institutional engineering.

DISCUSSION

MARTIN R. GAINSBRUGH: Mine is indeed a happy chore. Chairman Robert Gordon has cast me in the role of a "roving discussant." He left me free to comment on either paper, or to offer views of my own which are pertinent to the current economic situation. I plan to do both in my comments on Mr. Moore's paper.

At the time this session was first set up, it was to have been centered on the then current recession. Now Mr. Moore's treatment rightly embraces in part the current recovery and prospects of its continuance, based upon relationships with the recession which preceded it.

Mr. Moore places the recession in historic perspective relative to its duration and intensity. He finds it by the measures he has so skillfully developed to be somewhat more severe than its predecessors. This, then, suggests that the 1957-59 period of "depressed activity will not be the shortest in the list, though it may be at the short end." At a later point the intermediate severity of the contraction is viewed as suggesting "a year and a half to two and a half years from peak-July, 1957 to 'recovery date.'"

This and other works by Mr. Moore have been used to support the view that recovery this time might be more prolonged and less ebullient after the initial V of rebound—say from April to October—had run its course. In an earlier release of the National Bureau of Economic Research, it was stated that "if the contraction follows the course of contractions since 1920 and remains intermediate in severity, the economy may not regain the July, 1957 level of general business activity until some time in 1959 or even early 1960." And as late as October 19, the *New York Times* carried a lengthy story about the movement of the leading indicators to this headline effect: "Leading Indexes Tilt Downward. Series of Statistics Thought to Foretell Future Show Slightly Lower Trend."

What this all would seem to imply is a slower, if not halting, rate of recovery in the months ahead. It would seem to support that group of analysts whose enthusiasm about the levels of gross national product, industrial production, or corporate profits in 1959 is on the restrained side. If there is any wide split among business analysts as to trends in 1959, it certainly is far more over the degree of expansion than over the prospect of continued recovery in the year ahead. The optimist has the economy already entering the promised land of 500 billion dollars gross national product even before we enter the sixties. The pessimist would have us moving up, but at a lower rate, and frequently cites in connection with his restraint the recession-recovery relationships Mr. Moore has offered us.

Now, since I am a roving discussant, let me shift to another frame of reference, even as does Mr. Moore. You will recall the house rules he gave us at the close of his paper on the proper use of economic indicators for historical perspective. There he warns of the biases to which we are all heir. He mentions the shortfall of forecasts of recovery in 1953-54. At that time

we could not foresee where demand was going to well up. Similarly today, we may find the conservative wing again suffers from the same myopia.

In all fairness, though, it should be added that Mr. Moore's approach does not tell us from whence will come the demand to match the expanded product anticipated in 1959. Will the new model car catch on in 1959? Will it be consumer durables that first create an explosion in demand in the months ahead? Will industry with excess capacity far greater than in 1953-54 again become expansion-minded, as it was earlier? Will the Congress accept the economies proposed by the President for agriculture or in other areas? Will the prospects of steel labor negotiations lead first to huge inventory buying and then a slowdown?

It is the admitted inadequacies of appraising demand from the indicator approach that led first to the increasing resort to sector analysis and of late to development of a growing body of expectational data. It is gratifying to note in this connection the emphasis Messrs. Burns and Moore have placed upon the downturn in the Conference Board's series on capital appropriations as an early foreshadower of the 1957-58 capital goods recession. But what particularly caught my eye was Mr. Moore's reporting of the conservative character of "many of the forecasts that have been made about the current recovery." This, he believes, should be tempered by experience.

What would experience prospectively tell us about the dimensions of the current recovery? I have earlier cited the conclusions that the preceding intermediate recession suggested a slower rate of recovery. In fact, on another occasion Mr. Moore put it: "Recovery from this recession of intermediate severity is likely to be of an intermediate character, not exceptionally vigorous and not exceptionally modest."

Recently, Mr. Moore was one of the fifteen participants in our Economic Forum's annual discussion of "The Business Outlook." The consensus of views of that group was that gross national product by year-end 1959 would be about 480 billion dollars. Commenting on this, Mr. Moore held that to be a very conservative figure. It would imply the smallest percentage of recovery since 1929 over the same interval of time, excepting possibly that of 1927. This figure, I might add, is one of the higher in the year-end crop of business forecasts. Even in constant dollar terms it would bring us into new high ground well before the end of 1959.

I find it difficult to reconcile this type of conclusion with that which we have just heard, drawn from the context of the duration and severity of the preceding recession.

Business must plan now in many instances for its material and other requirements in 1959. In its decisions, what levels of demand can it look forward to, not only in the aggregate, but by sectors? As of the moment, summation of the sector accounts often yields a lower total than the level of recovery that history would suggest is still before us. Mr. Moore has rightly challenged business thinking by this and other recent papers. But the challenge is as much to the historical economic indicator school, of which he is an outstanding member, as it is to the sector-account, expectational-economics approach. Unless more is done than has been on the demand side, the economic indicator

approach leaves its users without many of the determinants needed for planning. Contrariwise, the sector-account approach may suffer seriously from inability to incorporate the synergistic or side effects which would yield a greater national aggregate than an independent casting-up of what is likely to be spent for each major form of outlay or by sectors. To paraphrase Mr. Moore, the results of both approaches still need to be tempered by experience. Each school has much to learn from and bring to the other. The indicators were indeed most helpful in spotting the turning point of the recent recession. They are not, however, mechanical measures that can be read on the run. In the hands of untrained users, they may even be dangerous. Mr. Moore seasons his analyses increasingly with more and more reference to sector accounts, monetary policy, expectational data, significant institutional changes, etc. So used, statistical indicators have an important, but not dominant, role in business cycle analysis.

J. HOWARD CRAVEN: The modest conclusion to which I am led by Mr. Moore's very able work is that the business cycle is still elusive. This is, indeed, consistent with the findings presented in the concluding paragraphs of the paper itself. In effect we are told, in forecasting business conditions, to look deeply at experience but be prepared for surprises. I heartily concur with both aspects of this sage advice.

Thanks to the thorough, careful research efforts of Mr. Moore and his colleagues at the National Bureau in preparing and analyzing business cycle data, the historical experiences of our economy can be more readily utilized than heretofore in helping us peer ahead. However, it is the expectation of novelty in the conjurings of economic forces which constitutes the problem of recurring recession. If we assume that every cycle is unique, in which direction —let alone by how much—should our forecasts of a new contraction depart from the past average behavior of this cyclical phase, or from an extrapolation of a simple trend observable in such behavior? Even early manifestations of an atypical configuration in the economy do not necessarily lead to a more skillful guess as to timing of downturn, duration, and magnitude of a contraction than might otherwise have been made.

If we are seeking a formula, then, we do not find it here. Rather, Mr. Moore has given us much more flexible guideposts in the form of buoys which roughly mark out a channel of analysis, warning of dangerous waters on both sides of the passage. He eschews neither conservatism nor optimism. He places historical perspective itself in perspective with respect to novelty, with the implication that forecasters would usually do better by straying not too far on one side or the other. He tells us neither to depend too much for insight on the most recent behavior of the economy nor to neglect its special relevance. Altogether, this is a well-balanced conclusion. If it gives no answers, at least it gives warnings of extremes in technique that should be avoided.

In the face of essentially vague meanings attached to business cycle terminology—even by experts—the National Bureau has valiantly stepped in to substitute a statistical exactness for an underlying (and continuing) conceptual imprecision. I am uncertain, however, that this is either entirely neces-

sary or all to the good. In short, I am incompletely converted to a number of techniques developed at length elsewhere and utilized in this paper. These include the defining use of the reference cycle in lieu of a general aggregative series, such as GNP; assessment of the scope of a recession by counting the number of series moving downward irrespective of the relative importance for any given purpose of the different series and magnitude of movement involved; and heavy reliance on "leading series." As an example of the first, if manufacturing activity relative to total industrial production behaves differently after a recession begins than preceding it, cannot this important difference be noted as readily in reference to, say, GNP as in comparison with a constructed reference cycle? As an example of the second question—that of measuring diffusion—are there not qualitative differences that outweigh mere number and that require verbal description to portray adequately the scope of impact of a recession? As an example of the third, when each of the "leading" series at one time or another is caught lagging, and when seven out of the eight have registered "lead" times exceeding half the length of the average cycle, at what point might these leads be reconsidered as long lags from the preceding cycle and the characteristic of leading be shorn from the series? Moreover, of what forecasting value is the reliance on a series designated as leading if the lead time varies widely, especially if it is found, at times, to lag?

The behavior of these eight leading series in the 1957-58 recession should be noted. Two did not lead at all. One led by eight months where the median for the series was five and a half months. The other five indicators had leads ranging from sixteen to thirty-one months—two of them reaching record lead times and another, very near the record. These five leads, compared with the respective median lead experiences through 1953, varied from twice the median lead to eight and a half times the median lead. Of what use were these leading series in predicting the timing of the downturn as later established by the movement of either the reference cycle or GNP? Taking the medians as the bases for forecasting the timing of the subsequent downturn, the 1957-58 recession should have begun in November, 1955, according to the inversion of business failure liabilities, in February, 1956, according to residential building contracts, in April, 1956, according to number of new business incorporations, and in May or June, 1956, according to the average manufacturing work week. At this point in time—the middle of 1956, more than a year prior to the reference cycle peak—half of the leading indicators had previously turned down as many months prior to that time as they usually turned down in advance of a recession. From June, 1956, to July, 1957, only two more leading indicators turned down, one calling the turn, by its median lead, for November, 1956, and the other, for May, 1957.

One comment which appears merely to quarrel with an inductive conclusion of Mr. Moore's is more basically a reflection of the paucity of data available to the empirical researcher in this field today. If anything, it is a plea in support of Mr. Moore's customary conservatism in drawing conclusions from statistics and against the use of "available" figures in the absence of relevant ones.

The quarrel is with the contention that government offsets to declines in

the private component have become increasingly large in recent contractions. It appears to me that a year—the length of time used for this comparison in the paper presented—is a rather arbitrary period and that a more relevant comparison would be the offset by governmental expenditures taking place from the time when the decline in the private component begins until the time it reaches its maximum. In the three recessions for which quarterly data are shown, this maximum occurs in the second quarter following the peak rather than in the fourth quarter. The fact that yearly comparisons would permit the use of two more recessions for comparison does not, in my own mind, justify a switch from second-quarter data. But the cost of sticking to the more relevant second quarter is severe indeed. It provides only two recessions to compare, one with the other—a meager fare, to be sure.

The story told by these two recessions in the second quarter after the peak is the opposite of that told in the full-year comparison. One year after the peak in business activity in 1957, 49 per cent of the cumulative decline in private product was offset by increases in government purchases of goods and services, compared with an offset only half so great one year after the 1948 peak. As Mr. Moore is careful to point out, however, the offset in the 1957-58 recession was only 11 per cent of the maximum decline in private product that had occurred by the second quarter following the peak. This contrasts with a 27 per cent offset in the second quarter of the 1948-49 recession, reversing the conclusion to which one would be led by fourth-quarter comparisons. First-quarter comparisons are also at odds with the paper's conclusion on this point. For myself, I would prefer to delay judgment on a trend in governmental offsets until such time as a larger store of quarterly recessionary data is available.

Two more small points. Attention on the contraction phase of the recession is diverted a bit by Mr. Moore's discussion of what is, perhaps, the more interesting period that he calls "depressed activity," which includes recovery.

Finally, on a point of presentation in Tables 6 and 7 on leads and lags of the twenty-one statistical indicators (omitted in published version), many a reader might profit from the inclusion of a footnote to the column labeled "Number of Rough Coincidences," explaining how many of the respective leads and lags already noted the rough coincidences count again; thus telling why the sum of the distribution does not add up to the total number of observations.

In conclusion, as is apparent to the audience, these ranging comments detract very little from an excellent, scholarly presentation by Mr. Moore.

Frank E. Norton: In recent years, economic analysis has begun to take account of the potential influence of autonomous price- and wage-making forces on the price level. Professor Lewis has given us an enlightening essay on these developments and more particularly their policy implications. The views he expresses on public policy are appropriate if one diagnoses the contemporary inflationary tendencies as being primarily due to such autonomous forces. There is some doubt in my mind, however, as to whether this represents an "emerging middle view" concerning the price stabilization problem. Many economists I believe would like to place somewhat more emphasis on a

few of the more traditional elements of the theory of inflation in interpreting the recent and prospective price-level performance of the American economy. Although some of the aspects that I should like to stress have been mentioned by Professor Lewis, the different weighting given to the various forces leads us to somewhat different policy prescriptions.

The concept of cost-push inflation relates to the circumstance that unions or other resource suppliers are able to raise factor prices more rapidly than can be offset by productivity gains, thus raising unit variable costs. Assuming profit margins are not excessive to begin with, this leads to an upward adjustment of product prices. The concept may also be taken to include "markup inflation" which may result from business firms raising their prices and consequently their profit margins, thus leading to a profit inflation.

As in the case of demand-pull inflation, the primary symptoms are rising product and factor prices and possibly profit margins. If aggregate demand is given, employment and output will be lower than previously and the level of aggregate demand may initially correspond to a relatively low level of economic activity. However, since full employment is an important social goal, the monetary and fiscal authorities will try to raise aggregate demand to achieve it and this removes any inhibiting influence that direct price-elasticity considerations might have on economic power groups.

The policy prescription for this case is that suggested by Professor Lewis or perhaps something as drastic as that proposed by Professor Lerner in the Joint Economic Committee Compendium. However, it should be noted that even in the case of cost-push inflation, productivity gains remain somewhat of a "free variable" from a policy viewpoint.

Now the types of policies that are appropriate in dealing with inflationary pressures primarily of the cost-push type, if not "revolutionary," at least constitute a rather marked departure from those we have accepted and used in the past. Society must accept some such policy innovations if we are faced with prospects of continued cost-push inflation. But as responsible professionals on economic policy, do we have at hand sufficient empirical evidence to justify such an irreversible move in terms of public policy? I think not.

Professor Lewis believes that the only prudent thing for public policy planners to do is to accept as valid the "inflationary bias hypothesis." Now if by this hypothesis we mean principally that wage and price determination are significantly "different" than they were in the mid-thirties and that this may lead to secular inflation, then I believe most economists would agree. But the unique policy actions follow only if it can be demonstrated that autonomous price-making forces do lead to secular inflation. Set against these changes in price and wage determination are significant advances in our knowledge of monetary and fiscal policy, although perhaps less in their implementation, and these have implicit importance for productivity gains. Since in a policy context we are not confronted with pure inflationary cases but a mixture of demand-pull and cost-push, all this is relevant to actual policy action. In short, what we need is an empirical test of the cost-push hypothesis concerning price-level movements before policy action is undertaken.

What empirical evidence do we have to test this hypothesis? Frightfully

little. Not even the postwar performance of the economy is relevant. After eliminating the postwar readjustment and Korean war years of excess aggregate demand, we are left with the upward movement of wholesale industrial product prices from mid-1955 to early 1957. For other periods, these prices have been nearly stable. I use this index because it usually leads movements of the consumers' price index and is most pertinent if one is concerned with autonomous price and wage determination forces.

Do the price movements of 1955-57 represent predominantly a case of cost-push inflation? Professor Lewis believes that they constitute a partial corroboration of this hypothesis although he points out that the period had some special characteristics. I would like to suggest that these special characteristics may quite plausibly be assigned most of the causal role in the price movements experienced.

The thesis I would like to submit is that the unbalanced composition of aggregate demand and rapid shifts therein taken together with resource immobilities may explain most of the price developments. At the same time I would agree that aggregate demand was not excessive during this period. It was during this period that the economy rolled from a consumption boom centered in automobile sales into an investment boom centered in capital expenditures. Although over-all demand was not excessive, this shifting composition of demand placed strains on various sectors which led to "specific inflations" that were thereafter propagated to other parts of the economy. Thus despite the fact that the markets for household durable goods and automobiles appeared weak after 1955, cost pressures were transmitted to these sectors from the investment goods sector. To this must be added a 6 billion increase in national defense expenditures from II-1956 to II-1957 which also contributed to demand pressures in the industrial sector of the economy.

Assuming for the moment that this diagnosis of the 1955-57 period is substantially correct, what are the salient policy inferences? First, adherence to the "bills only" doctrine inhibited the restraint of monetary policy on capital expenditures by causing long-term interest rates to rise only after a long lag. Because banks and other financial institutions were very liquid, they continued to sell securities as long-term rates drifted upward instead of having their portfolios "locked in" by an immediate upward movement of long-term rates. The process by which the rise in short-term rates was transmitted to long-term rates was entirely too slow. Thus the cost of funds changed only moderately and the availability of long-term funds remained substantial until II-1957. It would seem undesirable to limit open-market transactions to the short end of the market. Second, as Professor Lewis suggests, experimentation with variable depreciation allowances for tax purposes may be worth while for it is possible that they might have improved control here. Third, stand-by consumer credit controls would have reduced the automobile sales boom to more reasonable proportions. The influence of monetary policy appears weak in this area. Fourth, although it is inevitable that national security expenditures will vary in accordance with changes in international tensions, it is important to do some longer run planning so that they will not throw unnecessary stresses on the economy. This is particularly true with regard to the rate of change in

orders for "hardware." Our large stand-by military organization should be integrated with the civilian demands for national output.

Although it is impossible here to formulate a detailed empirical test of the cost-push hypothesis for the period mid-1955 to 1957, it appears plausible that the unsustainable structure of aggregate demand was of crucial importance in price movements. This suggests monetary policy should focus more on demand composition and that we need more selective controls. Moreover, if this could be accomplished, aggregate demand might be kept even somewhat higher, thus making possible greater productivity gains without inducing demand-pull inflation. As Professor Lewis has suggested, the inflation problem is not so urgent that we do not have time to evaluate it fully both with regard to causes and policy considerations.

BALANCED ECONOMIC GROWTH IN HISTORY: A CRITIQUE

FOREIGN TRADE AND BALANCED GROWTH: THE HISTORICAL FRAMEWORK*

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I

The appearance of yet another paper on the subject of foreign trade and balanced growth would seem to call for an apology, or at least for an explanation. My excuses for entering into this particular discussion are two: I do not agree with some of the more celebrated statements concerning the benefits which trade with industrial countries "should" have brought to the primary-producing countries, and I further do not think that what we know of the economic history of the "developed" countries justifies the notion that the success of their internal responses to the stimuli of external trade was due to simultaneity in the rates of growth of their component economic sectors. It seems to me that a widening of the differences of per capita real incomes between the industrial and the primary-producing countries, partly as a consequence of trade, should not have been unexpected, and that part of this widening was due to the repeated successful creation and correction of imbalances in the economic structures of the industrial countries. These bald assertions clearly call for careful analytical support. This I will attempt to provide in what follows.

This paper focuses mainly upon the internal reactions of nations to the stimulus of international trade. An attempt is made to explain why, with the international permeation of industrial technique accompanying the growth of international trade, the inequality of per capita incomes between industrially well-developed and the poorly developed nations has widened. Growth was facilitated by specialization and trade, and, on the basis of available studies in economic history it is shown here why the notion of "balanced growth" currently employed by some economists is misleading. The "simultaneous" expansion of all economic sectors envisaged by some growth theorists did not characterize economic development in the advanced Western nations—and for good reason. It is argued that, paradoxically, balanced economic growth (mutually supporting lines of investment) was achieved by the

* Concerning the issues involved in this paper, the author has profited from discussions with Professors Carter Goodrich, Donald Gordon, Hrothgar Habakkuk, Ragnar Nurkse, and Stanley Reiter.

Western nations because short-run imbalances were continuously created and corrected. The imbalances were the products of specialization, trade, and increased factor mobility, the necessary corollary of specialization. The correction of these imbalances was a critical part of over-all growth and consisted mainly of the elimination of impediments to factor mobility—impediments which were not removed in the primary-producing countries engaged in international trade.

II

We must first clear away some theoretical timber. While it is clear, in theory, that under certain circumstances international trade is capable of bringing about factor-price equalization internationally, it is not the case, as has been asserted, that this necessarily implies an international equalization of per capita real income.[1] The two are not the same thing at all. It is a combination of natural endowment and its uses (including trade) relative to population resources which determines per capita real income, and on this subject the theory of international trade does not, by itself, tell us much. We know that trade under the classical conditions should bring maximum world output, and we know from recent theory that, barring transport and similar costs, there may develop international equality of factor prices. Unless there is knowledge about relative factor endowments, this information alone leads us to no particular expectations about the likely movement of relative per capita incomes among the trading countries. Moreover, application of other branches of economic theory leads us to expect that the distance between per capita real incomes in the developed and underdeveloped countries would tend to widen, not tend to equality, and that trade probably hastens this process.

The main conditions for rapid and sustained growth are precisely those which are generated by successful industrialization:[2] high levels of consumption and saving based upon rising productivity, vigorous innovating by entrepreneurs, efficient channeling of savings into investment through flexible financial institutions, and so forth. Possible gains

[1] Hence the best-known recent transformation of the factor-price equalization arguments into an income-equalization argument is formally incorrect. To quote Myrdal: ". . . according to the classical doctrine movements of labor and capital between countries would not be necessary to bring about a development toward an *equalization of factor prices and, consequently, incomes*." Again: "We thus see the strange thing that in recent decades, while international economic inequalities have been growing and recently also have become a more and more pressing practical concern in international politics, the theory of international trade has developed in the direction of stressing ever more the idea that trade initiated a tendency toward a gradual *equalization of factor prices and incomes* as between different countries." Gunnar Myrdal, *Rich Lands and Poor* (New York, 1957), pp. 151-152. My italics. While it may be true that theory has been stressing the possibilities of factor price equalization, it certainly has not been stressing equality of incomes. These are two different things.

[2] A rigorous statement of these pen-worn truths will be found in Donald F. Gordon, "Obsolescence and Technological Change: Comment," *A.E.R.*, Sept., 1956, pp. 646-652.

from trade between countries which have achieved these conditions and poorly organized underdeveloped countries would doubtless be distributed in favor of the former where elements of organized human skills determine market conditions and the terms of trade. Thus the widening of per capita incomes between the developed and the underdeveloped countries after many decades of trade between them would not, *ceteris paribus,* be unexpected. But trade was, historically, a stimulus, at least initially, to expansion of output, however unequally that expansion was distributed among the trading countries. To understand more fully the conditions which generated this disparity we need to know, among other things, what determined the internal reactions of various countries to the stimulus of external trade. Here we can learn some useful lessons from an examination of certain aspects of the history of economic growth and of international trade theory.

III

The statistical fact of the great difference in per capita "incomes" between the trading countries was thrown into clear relief in *Industrialization and Foreign Trade,*[8] the pioneering work of the great Swedish foreign trade economist and statistician, Folke Hilgerdt. He demonstrated that after a century of industrialization and rapidly expanding foreign trade, per capita supplies of manufactured goods were extremely unequal as between the industrial and primary-producing countries even though trade in primary products had risen about twice as much as had trade in manufactured goods. By 1926-29, he estimated that to raise per capita supplies of manufactured goods in the primary-producing countries of the world to only one-half the levels then prevailing in the industrial nations, the primary-producing countries needed to have imports equal to twice the value of all the commodities then entering into world trade. This was clearly impossible to accomplish, and on this basis Hilgerdt argued that international trade on the basis of comparative advantage would never, by itself, suffice to raise two-thirds of the world's population to a standard of life anywhere near that which prevailed in the industrial countries which supported the other one-third (*ibid.,* Chapter 2). By that time there had been, after all, plenty of time, mainly in favorable circumstances as regards the conditions of trade and payments, for international trade to spread its benefits among the world's commercial nations. There was certainly no evident tendency for per capita incomes, as indicated by per capita supplies of manufactured goods, to tend to equality between the industrial and the primary-producing countries.

What had happened was the nightmare from which we are still try-

[8] League of Nations, 1945, reprinted by the United Nations in 1948.

ing to extricate ourselves, both in the world of affairs and in the learned journals where the debate on development and balanced economic growth rages. The rise of the great multilateral system of international trade and payments of the nineteenth and early twentieth centuries had stimulated a broad growth of productivity together with a widening of markets only in a limited number of countries, and had left the other trading countries with isolated sectors of high productivity surrounded by relatively unchanging economic backwardness. Why had this occurred?

IV

I think that at least part of the answer to this critical question is to be found in economics; moreover, economics of the most old-fashioned and familiar kind. The approach to the answer again lies in the realm of theory.

In a recent paper[4] Mr. Myint, of Oxford, has differentiated between three separate inducements for international trade to be found in the writings of the classical theorists. He calls these: the theory of comparative costs, the vent for surplus theory, and the productivity theory.

In the "comparative cost" theory trade allows for specialization and greater efficiency of use of resources with given production-possibility functions.

The "vent for surplus" theory does not comprise the Ohlin-type isolated economy in full employment where, with the introduction of trade, the greatest (relative) advantage goes to the most plentiful factors. Instead, the "surplus" is essentially in the form of disguised unemployment. Trade brings a once-over change to productive employment once markets and the external economies of transportation, etc., are introduced. After this, growth occurs along a normal-curve path and new factor combinations do not occur. Here is a theoretical statement which roughly corresponds to the experience of many underdeveloped countries.

The "productivity" theory, however, postulates that with the widening of markets there will occur judicious assessments of new profit possibilities and new factor combinations will appear, raising productivity, and, in turn, introducing the possibilities of further change. Consequently the flood-gates of rapid economic development are opened. This is no static theory of comparative costs. If I may be permitted to quote Mr. Myint:

> In contrast [i.e., to comparative costs] the "productivity" doctrine looks upon international trade as a dynamic force which, by widening the extent of the market and the scope of the division of labor, raises the skill and dexterity of the workmen, encourages technical innovations, overcomes technical indivisibilities and generally enables the trading country to enjoy increasing returns and economic development. (*Ibid.*, pages 318-319.)

[4] H. Myint, "The 'Classical Theory' of International Trade and The Underdeveloped Countries," *Econ. J.*, June, 1958, pp. 317-337.

Now here is a statement about international trade theory and economic development which makes good sense to the economic historian, and evokes certain well-known characteristics of the economic development of the Western industrial nations.

V

In the Western countries, time and time again, the expansion of foreign trade provided the opportunity for innovation to create dramatic structural changes—changes which raised productivity and thus produced expanding output per capita. But here we reach a crucial point. These structural changes involved wholesale substitution of factors and factor mobility. Where these two processes did not take place easily, there was a harsh adjustment as in the celebrated reduction of the British handloom weavers to abject poverty. Old processes and skills were scrapped. Moreover, some of the rising export industries supported local industries, many of which subsequently developed into efficient industries capable of competing in international trade. In Professor North's terminology, the export base supported and helped to develop the residentiary industries.[5]

This process created a moving, changing complex of end products which satisfied consumer demand and the creation of which gave rise to complementary investment which generated income and supported more innovation. This process could continue so long as old factor combinations gave way to new and more efficient combinations. Here we have, in a dynamic world, mutually supporting investment in different areas of production which widened the market for expanding output. Or in other words, the end result was a close approximation to Professor Nurkse's equilibrium notion of "balanced growth."[6]

It is crucial that one realize that this balanced growth was an end result produced and maintained by the ceaseless ebb and flow of innovations and changing factor combinations. It was not a phenomenon created by the simultaneous expansion of mutually supporting sectors. The mutually supporting sectors were in fact the survivors of a persistent war of attrition, the intensity of which was made possible by continued response to new profit possibilities. Individual sectors or industries plunged ahead, sometimes carrying the system along, sometimes destroying important parts of the old way of doing things. The net result was an increase in per capita output, but the cost to the

[5] Douglass C. North, "Location Theory and Regional Economic Growth," *J.P.E.*, June, 1955, pp. 243-258.

[6] Ragnar Nurkse, "International Trade Theory and Development Policy," paper prepared for the Roundtable of the International Economic Association, Rio de Janeiro, Aug. 19-28, 1957. I am indebted to Professor Nurkse for permission to cite this unpublished paper.

losers could be high indeed. Hence, while it may be clear, as Professor Lewis argues, that the logic of simultaneous growth is as ". . . unassailable as its simplicity . . .," it is equally clear that an appeal to the history of the successful industrial nations is no place to look for empirical support for simultaneous growth as an economic policy for the underdeveloped countries.[7]

I should like to expand on this point. I have said that balance was the net product of imbalance. What precisely does imbalance refer to? I mean by this awkward term, disturbances which raised the possibility, in terms of profits and higher productivity, of disrupting the existing order of things with new factor combinations. Basically there were three ways in which the dynamic consequences of imbalances were felt, in the cases of: derived demand, complementarity, and competitive pressure. I will illustrate each with an example taken from the literature of economic history.

The derived-demand case is familiar to us in Mantoux's chapters on the great inventions of the industrial revolution; for example, the impact of power spinning on weaving. Here in a series of connected production processes, all leading to a single finished product, a single innovation raised demand for the next process in line—demand which was derived from the demand for the final product. By lowering the sum of the supply prices of other components, there was an increase in demand for the remaining component (total demand for the finished product remaining unchanged).[8] This took the form of increased profit possibilities for innovation in the area where the old process prevailed. Thus for a while after power spinning had been introduced, the handloom weavers sported £5 notes in their hatbands, but ultimately their skill was rendered superfluous by the power loom. The imbalance created by improved spinning was filled by the power loom. Growth from higher productivity was the result. Here is what Mantoux observed when he said that innovation was forced by innovation.[9]

The complementarity case is well known; for example, the impact of the internal combustion engine upon the demand for rubber and petroleum products. A full statement of this was given by Karl Marx in the first volume of *Capital* (he also was aware of the derived-demand case). Discussing the great changes which had taken place in the

[7] W. A. Lewis, *The Theory of Economic Growth* (London, 1955), p. 283. Whereas the logic of "balanced growth" might be "unassailable," a careful scrutiny of Leonard Arrington's *Great Basin Kingdom* (Harvard, 1958) will show that even in the United States in the nineteenth century balanced growth could be a blueprint for near-disaster if rigorously pursued.

[8] An interesting historical example at a point of Marshall's statement of derived demand. Alfred Marshall, *Principles of Economics* (8th ed., London, 1949), pp. 317-320.

[9] Paul Mantoux, *The Industrial Revolution in the Eighteenth Century* (London, 1949), pp. 244-251. For the earlier imbalance set up by the introduction of the flying shuttle, see pp. 211-213.

British engineering industries in the mid-nineteenth century, he notes the necessity of change in complementary industries:

> But the huge iron masses that had now to be forged, to be welded, to be cut, to be bored, and to be shaped, demanded, on their part, cyclopean machines, for the construction of which the methods of the manufacturing period were utterly inadequate . . . it was only during the decade preceding 1866, that the construction of railways and ocean steamers on a stupendous scale called into existence the cyclopean machines now employed in the construction of prime movers. (Glaisher edition, London, 1918, page 380.)

The competitive case has always been a critical one and is perhaps most familiar in two aspects. In the first, innovation killed older factor combinations—for example, the steamer and the sailing ship in ocean transportation. In the second, innovations which threatened the survival of firms employing older methods, spurred the adoption of competing innovations—for example, the railway in Britain and the adoption of the iron-screw collier by the Tyneside coal owners.[10]

These processes of imbalance, when they were corrected, resulted in growth and development, rising per capita output due to the successful adaptation of technology and the adoption of new methods. One need not be a devotee of Schumpeter's system to see the virtue of it here. Either by trade or by domestic investment (or both) market demand created by imbalance was filled. But it was filled by further expanding the market—by raising productivity in new or in cognate lines of industry. Imbalance, by offering profit incentives, gave new enterprise a chance to strike a new balance.[11] The result was a Schumpeterian world where total output expanded rapidly with cyclical interruptions; and even these helped to speed the process by hurrying obsolete methods along to their graves.

VI

What we have finally to consider is why this desirable kind of development was so limited in the area of its permeation: why a process which characterized the development of nearly every country in northwest Europe and in the areas of European settlement overseas did not spread elsewhere, say in southeast Asia or in Latin America.

Here we rely once again on Professor Nurkse. As we have noted, balanced growth did not mean that there were never supply shortages. But shortages were created, then overcome, and, with cyclical interruptions, there was a rising trend of per capita output. Where the reaction to foreign trade gave rise to supply shortages, the Western countries responded by new factor combinations, the "productivity"

[10] J. R. T. Hughes and Stanley Reiter, "The First 1,945 British Steamships," *J. of the Amer. Statis. Asso.*, June, 1958, pp. 378-380.

[11] A short discussion of this concept and its applicability to American economic development was given by Professor Carter Goodrich, in an as yet unpublished paper, "Economic History and Economic Development," at the Texas Conference on Economic Development, Apr. 21, 1958. I am indebted to Professor Goodrich for permission to cite this paper.

inducement derived from trade. As Nurkse argues, international trade —Professor Robertson's "engine of growth"—could best transmit its advantages where the mobilization of new factor combinations was possible. The problem was not the allocation of given resource combinations to make a given output but, rather, that increments in output over time had to be provided by new combinations of factors. Hence the Rhineland's manufacturing industries could innovate and could maintain their growth in the international market of the nineteenth century after only a brief experience, while parts of Asia after centuries of trade with the West remained single-product economies so far as international trade was concerned. In too many cases, the product (or product combination) was the original one where trade on the "vent for surplus" lines had, for the most part, brought only an initial gain in terms of per capita output. Growth in these areas remained unbalanced, and indeed barely kept ahead of the growth of population.

On the basis of the analysis developed in this paper, a study of the differences in internal reactions to trade can be reduced to a study of relative impediments to factor mobility, given the factor endowments. Since so many of these impediments in the underdeveloped countries were, and are, social and cultural, policies for their elimination may well lie outside the realm of economic policy. Indeed, economic impediments were partly overcome long ago; railways, port facilities, banking systems and so forth were introduced. Lately even state policies which impeded the development of new forms of economic activity have been in the process of reform.

But the failure of "residentiary industries" to grow up around the great export industries of the underdeveloped countries was, and is, also due to the continuation of social and cultural patterns which are hostile to factor substitution, mobility, and, indeed, even to the expansion of a domestic market.[12] When Western economists ask Asians and Africans to adopt our industrial system, or something like it, they are asking these people to "be like us" in more ways than just the adoption of the latest machines. Herein lies the ultimate barrier to the development of Western-type living standards in underdeveloped countries, I think, even if nature's parsimonious ration of natural endowments can be overcome.

Thus I arrive by a circuitous route at the most obvious and commonplace position on underdevelopment. But I think it is worth doing to show, in an organized way, that what we have experienced in economic history is not inconsistent with economic theory and involves a lot more than just economics. This I hope will be of some use to students of economic underdevelopment.

[12] Henry G. Aubrey, "Industrial Investment Decisions: Analysis and Comparison," *J. of Econ. Hist.*, Dec., 1955, pp. 335-351.

BALANCED ECONOMIC GROWTH IN HISTORY

By Goran Ohlin
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I

It is a cause of much confusion that "balance" in economic growth could mean almost anything.[1] In the following paper I shall confine myself to questions which arise from the so-called "doctrine of balanced growth." I take this doctrine to be a line of argument which emphasizes the limiting role of markets in the process of economic growth. Without at least a prospective market of some promise, we cannot expect efforts to introduce new or cheaper supplies. In Allyn Young's famous paper, "Increasing Returns and Economic Progress," he said: "It is dangerous to assign to any single factor the leading role in that continuing economic evolution which has taken the modern world so far away from the world a few hundred years ago. But is there any other factor which has a better claim to that role than the persisting search for markets? No other hypothesis so well unites economic history and economic theory." (*Economic Journal,* December, 1928, page 536.)

Of course, if markets generate economic growth, it is also true that it is growth that creates markets, that the market is limited by the extent of the division of labor, to reverse the old dictum. It is the idea of increasing returns that rescues us from a mere tautology and provides us with a profound theorem.

Allyn Young called his paper a variation on the theme of Adam Smith's proposition about the division of labor, and his contention was that at the heart of economic progress was the interrelatedness by which the expansion of one industry would create markets for another and thus generate economies external to the first industry. This was a broader concept of external economies than Marshall's, which referred to those external to the firm, and it was a broader concept of increasing returns. We would miss the economies of the division of labor, Young said, "if we try to make of *large-scale* production (in the sense of production by large firms or large industries), as contrasted with *large* production, any more than an incident in the general process by which increasing returns are secured and if accordingly we look too much at the individual firm or even . . . at the individual industry." (*Ibid.,* page 531.)

Young left several questions unresolved but he suggested in broad

[1] For an inventory of some of the uses of the term, see Charles Kindleberger, *Economic Development* (New York, 1958), pp. 149-150.

strokes a process in which external economies played a driving and dynamic part. Although he recognized the difficulties that might arise where demand was inelastic or where natural scarcities raised barriers, what interested him was the understanding of how "change becomes progressive and propagates itself in a cumulative way." (*Ibid.*, page 533.)

The doctrine of balanced growth associated with the names of Rosenstein-Rodan and Nurkse has a slightly different emphasis.[8] It is a more "hitchbound" view of economic progress, to use Schumpeter's term. The hitch is precisely that if a large part of the benefits of economic growth are external in the sense that they accrue to others than the initiator, there may be no incentive to start the process. Investment projects may be discouraged by the smallness of the market if demand is inelastic and investment is lumpy. However, a number of projects simultaneously undertaken in different industries might generate external economies for one another by enlarging markets to the point where they are all profitable. A broad attack is called for to get the economy off dead center—"a wave of new investments in different branches of production can economically succeed, enlarge the total market and so break the bonds of the stationary equilibrium of underdevelopment." (Nurkse, *op. cit.*, page 15.) The "balance" is, particularly in Nurkse's argument, what one might call a horizontal balance among industries on the level of final demand, or even consumer's goods: "Most industries catering for mass consumption are complementary in the sense that they provide a market for, and thus support, each other." (*Ibid.*, page 11.) It is from these horizontal complementarities that external economies arise as markets are simultaneously enlarged.

I stress this because there is another type of complementarities which is, perhaps, rather more obvious—that between industries at different stages of production. Such vertical complementarities may give rise to external economies if increasing returns are present—and this is more likely to be the case the farther down we go among producers' goods industries. The market may be more of a limitation; indivisibilities and monopolistic conditions may be more prevalent. The market for textile machinery, for instance, may not support a single efficient firm even though in the textile industry itself the market is large enough to support a number of competitive firms and increasing returns there are unlikely. In such cases, the simultaneous expansion of lower and higher stages of fabrication will make it possible to reap "pecuniary external economies," in Viner's phrase. It is also worth noticing that such econo-

[8] P. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," *Econ. J.*, June-Sept., 1943; Ragnar Nurkse, *Problems of Capital Formation in Underdeveloped Countries* (Oxford, 1953).

mies made possible in the producers' goods fields by the expansion of some consumers' goods industry (or, for that matter, any industry at a later stage of fabrication) is likely also to reduce the cost of factors for other consumers' goods industries. (Cf. Marcus Fleming, "External Economies and the Doctrine of Balanced Growth," *Economic Journal*, June, 1955, page 250.) Moreover, the effects of increasing productivity in vertical stages of production will have the same effect (if any) on demand at the consumers' goods level as in the case of horizontal economies among consumers' goods industries.

I think it was this latter sort of industrial complementarity that was foremost in the mind of Allyn Young, whose subject matter was the growth of "roundabout methods" and the division of labor among industries. It suggests that external economies may play a part in economic growth, which is somewhat different from that contained in the idea of balanced growth.

The "doctrine"—if it should really be called that—has been advanced as an argument for a strategy of broad attack in programs of economic development, but it also implies an interpretation of the historical experience of growth. In the first place it would make us expect to find sharp discontinuities in economic growth—industrial revolutions or take-off periods of the kind Rostow has attempted to identify. Rostow puts more stress on the social and cultural barriers which have to be pierced and on sudden changes in the rate of capital formation; but market limitations would produce a similar result if only a simultaneous, or reasonably simultaneous, expansion in many sectors of the economy would overcome them. (W. W. Rostow, "The Take-Off into Self-Sustained Growth," *Economic Journal*, March, 1956.)

One may ask what precisely simultaneous investment or expansion means in this context, since we are not talking about planned economies. What matters here is what entrepreneurs count on in their calculations, what they expect conditions in their factor and goods markets to be like within the time horizon which is relevant to them, whether they expect them to remain as unfavorable as they may be at the moment or more advantageous as the result of developments in other sectors of the economy. Presumably optimism, long views and an expectation of growth will make it less necessary for everything to happen at once; a conservative estimate of the future and a narrow time horizon will make a sharp breakthrough more essential but also more dependent on some outside shock.

To some extent, then, it depends on entrepreneurship how sharp the break has to be. It will also depend on the extent of significant indivisibilities. In a backwards country, there is likely to be a backlog of technological opportunities which require operations on a scale which is

large relative to existing markets. We might therefore, on both these grounds, expect a sharper break in cases of "delayed industrialization." This is one reason, besides many others of a political and sociological nature, why Gerschenkron emphasizes the need for a "big push" in the relatively backwards European countries in the nineteenth century. The English industralization is regarded as a more gradual process, but in those countries the "gulf between economic potentialities and economic actualities" was increasingly widened by the technological advances emanating from England, and the technological discontinuity contributed to the eruptive character which the industrialization of such countries manifested once it got under way. To quote Alexander Gerschenkron:

> As likely as not the period of stagnation . . . can be terminated and industrialization processes begun only if the industrialization movement can proceed, as it were, along a broad front, starting simultaneously along many lines of economic activities. This is partly the result of complementarities and indivisibilities in economic processes. Railroads cannot be built unless coal mines are opened up at the same time; building half a railroad will not do if an inland center is to be connected with a port city. Fruits of industrial progress in certain lines are received as external economies by other branches of industry whose progress in turn accords benefits to the former. ("Economic Backwardness in Historical Perspective," in Bert F. Hoselitz, editor, *The Progress of Underdeveloped Areas*, Chicago, 1952, page 8.)

Some of the problems that the doctrine of balanced growth raises for historians are thus related to the questions of the take-off and the big push. It also poses the question of the extent to which foreign markets offered an escape from the limitations of domestic ones. No one—and certainly least of all Nurkse—is unaware of the fact that international trade played an important part in nineteenth-century economic growth, but it is nevertheless legitimate to ask whether the pace of economic growth was set by foreign trade or by the development of domestic markets and how the process might have worked. The profitable exportation of primary products, for instance, is regarded by Rostow as a delaying factor in the industrialization of certain countries, whereas Douglass C. North traces the growth of domestic industry precisely from the impact of such staple exports. ("A Note on Professor Rostow's 'Take-Off' into Self-Sustained Economic Growth," *Manchester School*, January, 1958, page 74.)

In the following, I shall first discuss the discontinuities in European economic growth and then take up some aspects of the growth and interrelation of markets.

II

In the statistical evidence it is by no means easy to identify any sharp breaks or "initial pushes." In the series for national income, per capita income, or even manufacturing output there are few, if any, sudden

upward surges from a stationary or stagnant state. Individual industries do indeed show spectacular upswings, but aggregate growth rates do not disclose sudden accelerations.

The figures for national income and per capita income for a number of countries which Kuznets has recently collected go back in most cases to the 1860's, and in some cases we can push back farther than that. In these data, long-run retardation of growth is more prominent than acceleration.[3] To be sure, certain periods stand out as periods of unusually high rates of growth, but in most cases these are secular swings (in heavily smoothed data) which are preceded by growth rates which are already substantial and followed by a return to those levels. To cite only the rates for national income per capita, the German rate rises from 2.5 per cent per annum in the 1860-70 period to a level of close to 4 per cent in the 1880's; it then declines to about 1 per cent by the turn of the century. The Swedish rate is 3.3 per cent already in the 1860's and 1870's, then falls for a while to between 1 and 2 per cent but returns to the old level in the 1890's. The French rate is around 2 per cent ever since the 1840's, except when it temporarily drops in the 1870's. The Canadian figure declines steadily from a level of about 4 per cent which it manifests in the 1870's and 1880's; the Japanese figure similarly declines from a level of 4-5 per cent in the last two decades of the nineteenth century and then bounces back after the first World War.

There are exceptions: in Denmark the rate climbs from 1 per cent in the 1870's to about 2.5 in the 1880's and later; in Italy the rate is as low as one-half of 1 per cent until the middle of the 1880's when it jumps to a level of 2 per cent or so where it remains for a decade and a half. But in England, too, the rate was below 1 per cent in the 1860's and 1870's; whereupon it jumped to between 1.5 and 2.5 during the period we still call the Great Depression.

The sudden onset of sustained growth does not leap to one's eye in these figures. The same is true if we consider the indices of manufacturing production which Hilgerdt collected.[4] We notice an occasional quickening of the trend—in Germany in the 1880's and 1890's, in France in the first decade of the new century, in Canada around the turn of the century, etc. But the difference between these unusually high rates and the average rate over the very long period are far less pronounced than the differences among the averages for different countries.

Part of the trouble is, of course, that our statistical archeology does not reach into deeper strata than those of the 1860's and 1870's. But

[3] Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations: I. Levels and Variability of Rates of Growth," *Economic Development and Cultural Change*, Oct., 1956.

[4] Folke Hilgerdt, *Industrialization and World Trade* (League of Nations, 1945).

it is often after that time that the transitions are supposed to have occurred. Accordingly, Gerschenkron's conception of the initial push lays more stress on a temporary quickening in the rate of change. As one aid in the identification of it, he suggests that it ought to be characteristic of the big push that the momentum of the domestic industrial development carries the economy over at least one international depression. The steadiness of the advance should distinguish it from a trivial cyclical spurt. Moreover, we should expect a particular emphasis on producers' goods rather than consumers' goods in view of the greater technological opportunities available in those industries in a backwards country. His index of Italian industrial production shows steady advance from the mid-nineties to 1908. This upsurge was strikingly immune to the recession of 1900, and there was rapid increase in the share of producers' goods. His inclination is therefore "to locate the period of the great push between the years 1896 and 1908." (Alexander Gerschenkron, "Notes on the Rate of Industrial Growth in Italy, 1881-1913," *Journal of Economic History,* December, 1955.)

This was evidently a period of rapid industrial expansion—of sustained growth at a rate of 6.7 per cent per year. But the rate of growth in the previous upswing, between 1881 and 1888, had been 4.6 per cent, which does not indicate absolute stagnation. The setback in the early nineties which interrupted this advance might well be understood in the light of the severity of the international downturn at that time. Moreover, this earlier advance was even more concentrated in the producers' goods industries than the second spurt—the upswing in metal making was particularly dramatic, with a rate of 22 per cent per year as compared to 12.4 in the second period. (*Ibid.*) Is it then warranted to lay such heavy stress on the slight break which separates the two spurts? Are we not rather entitled to stress the fairly dynamic character of both?

The broader question, it seems to me, is in what form we expect to find the push. Obviously not as a mere short-run cyclical upswing. What we are looking for is a growth phenomenon of a long-term nature. But how long term? Is what we have in mind merely a slight acceleration and a skipped depression even if this only results in a secular swing around the trend, a Kuznets cycle, as Arthur Lewis calls it, of something like twenty years duration? If this were our criterion, I fear we would be burdened with too many pushes for comfort.

The records which enable us to gauge the rhythm of economic change are themselves one of the new products in the grówth process. Whenever they start, rates of growth in total as well as per capita product are fairly substantial. They will always tend to start just a shade too late to throw much light on the transition. There must, on the other hand, have

been one, because it is perfectly obvious that the rates of growth we do observe around the middle of the nineteenth century could not have prevailed for long.

The practice has been to identify industrial revolutions by a variety of indicators: the prevalence of the factory system, the switch from charcoal to coke, the number of steam engines, the construction of railroads, the vigor of promotion, the turning points in state policy, and so forth. The reality and significance of such periods of intense and conspicuous change is not in doubt, but their impact on the sedate advance of long-run economic growth seems surprisingly, almost disappointingly, slight and short lived. It is difficult to separate the cyclical bunching of new starts from the long-run phenomenon; it is easy to overestimate the role of the dramatic. Above all, it is quite probable that some of the striking institutional changes which attend economic growth, and without which it could not proceed, actually tend to follow rather than lead the beginning of rapid growth. As far as growth rates is concerned, the result of relying on casual impressionism is therefore probably to exaggerate the abruptness of the transition and to place it too late.

The indications we have of industrial growth rates in the nineteenth century suggest that they were often startlingly high long before the suggested take-offs. In Prussia, for instance, coal output increased at a rate of 6-7 per cent per annum between 1830 and 1845. The output of pig iron in Germany expanded at a rate of about 14 per cent per annum between 1830 and 1840; it then remained stagnant for a decade and, beginning around 1850, rose again at a rate of some 10 per cent per year.[5] To be sure, the early growth was from a low level and the industry was still most primitive, but does this make it any less pertinent? The trend would seem to be one of vigorous expansion from a very early point. The familiar phenomena which at a later time produce the impression of a society in sudden transformation might well have been responsible for the continuation of a trend rather than for an abrupt acceleration. Did not German modernization begin at Jena?

If we turn to the English case, to inspect a more sedate progression into industrial change, Hoffmann's index of industrial output shows a rate of increase which fluctuated between zero and 2 per cent per annum from the beginning of the eighteenth century up to 1780. It then rose to a level of 3-4 per cent and, except for a slight setback during the Napoleonic Wars, it remained there until the decline set in in the 1850's or 1860's.[6] Here, then, the long-run growth rate was lifted by

[5] M. Meisner, *Weltmontanstatistik*, I (Stuttgart, 1925), p. 84.

[6] Walther G. Hoffmann, *British Industry, 1700-1950* (Oxford, 1955), pp. 31 ff. Phyllis Deane's reconstruction of English national income in the eighteenth and early nineteenth centuries suggests an even more abrupt upturn. See "The Implications of Early National

2-3 points, quite suddenly and fairly lastingly. This is the magnitude of the increases in industrial growth rates which occur in, say, Italy and Russia in the 1880's.[7] If the latter amount to a big push, why not the former?

The obvious difference between these cases is that the delayed industrializations were characterized by generally very high rates, not only during the pushes, but long before. But the high rates we know from the second half of the nineteenth century were not necessarily attained in a very much more abrupt fashion than in England. The change in the rate of growth, its acceleration, may well have been slower.

By themselves, rates of growth would tell only part of the story, even if we knew them accurately, which is not the case. What I wish to suggest is merely that discontinuities in development for which one might be inclined to seek an explanation in the doctrine of balanced growth were not so obviously very much sharper in the relatively backwards countries than in England, and that perhaps in general they were not very sharp. Douglass North seems to have arrived at a similar conclusion in his scrutiny of the suggested take-off periods in the United States and Canada. In many cases, he says, "an increased rate of expansion took place rather gradually." ("A Note," page 75.)

III

If there is reason to be suspicious of the idea that an eruptive start generated the markets and economies in the early phase of growth, how were markets actually found? I think it is fair to say that on the whole the demand side has not attracted anything like the attention that the supply side has commanded in historical enquiry. Problems of production—technology, finance, labor force, and so on—have been investigated far more closely and usually, except in cases of staple exports and specific raw materials, on the assumption that demand was gratifyingly elastic. Yet, in most producers' goods industries the opposite must have been the case, and the shifts in the demand curve should

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Income Estimates for the Measurement of Long-Term Economic Growth in the United Kingdom," *Economic Development and Cultural Change*, Nov., 1955, and "Contemporary Estimates of National Income in the First Half of the Nineteenth Century," *Econ. Hist. Rev.*, Apr., 1956.

[7] The Russian industrial advance was particularly rapid in the 1890's when industrial output grew at a rate of about 8 per cent. Between 1862 and 1882, on the other hand, Gerschenkron guardedly estimates the growth rate to have been about 3.5 per cent, "a low rate in comparison with the subsequent periods of Russia's industrial history." He concluded that the abolition of serfdom and the other reforms "did not immediately usher in a period of very rapid industrial progress." Even so, this is not a negligible rate, and it may be taken as evidence of a fairly gradual acceleration rather than an abrupt one. Cf. Alexander Gerschenkron, "The Rate of Growth in Russia," *J. of Econ. Hist.*, Sup. VII, 1947, p. 143.

have played at least as dynamic a role in the growth of the industry as the drops in the supply curve.

In eighteenth-century England, we are told, marketing conditions were favorable to manufacturers. Incomes were higher than, e.g., in France, and they were more evenly distributed, transportation costs were lower and distribution facilities were better organized both at home and in the export trade.[8] The income elasticity of demand for textile goods must have been fairly high at the time, and it is quite likely that rising agricultural productivity and incomes at home furnished the spur to the expansion of the cotton textile trade and to the innovational activity which characterized it. Price elasticities, too, must have been high as long as it was largely a question of displacing Indian imports—we have some indication of how high they might have been in the elasticity of substitution between Japanese and British cottons in the Chinese markets in the 1920's and 1930's which was, not infinite but about 10.[9] We hear more and more, after 1750, about the distribution in rural markets, about Manchester "riders out," about traveling Scotchmen and country drapers.[10] At the same time, exotic overseas markets were being developed. And yet, how very sluggish the progress of the industry appears in the light of what was to come. In the first half of the century the imports of raw cotton grew at a little more than 1 per cent per annum; between 1750 and 1780 the rate jumped to about 3 per cent. Then, in the 1780's, there is an explosion to the tune of some 20 per cent per annum; whereupon for half a century or so the rate settles around 8 per cent. (Wadsworth, page 170; Hoffmann, *British Industry,* page 326.)

One must conclude that before 1780, although the cotton textile market was expanded by advances in agriculture and commerce as well as by the famous cost-reducing innovations in weaving and spinning, the combined impact was relatively mild. At the same time, in the producers' goods industries the evidence of what Dahmén calls "market suction" (that is, of impulses to expansion and possible economies generated outside the industry) is even less impressive.[11] In the iron industry, it was only foreign competition that made the scarcity

[8] H. J. Habakkuk, "The Historical Experience on the Basic Conditions of Economic Progress," in L. Dupriez, ed., *Economic Progress* (Louvain, 1955), pp. 152-154. Cf. E. W. Gilboy, "Demand as a factor in the Industrial Revolution," in *Facts and Factors in Economic History* (Cambridge, Mass., 1932).

[9] As calculated by Shozaburo Fujino and cited in Miyoshi Shinohara, "A Survey of Japanese Literature on Japanese Economic Growth" (mimeo., Stanford Project for Quantitative Research in Economic Development).

[10] A. P. Wadsworth and Julia de L. Mann, *The Cotton Trade and Industrial Lancashire, 1600-1780* (Manchester, 1931), p. 238.

[11] For Erik Dahmén's discussion of market growth, see "Technology, Innovation and International Industrial Transformation," in L. Dupriez, ed., *Economic Progress* (Louvain, 1955); also his *Svensk industriell företagarverksamhet* (Stockholm, 1950).

and rising price of charcoal into a problem, for demand seems to have been quite inelastic. T. S. Ashton cites an early eighteenth-century ironmaster's complaint about a small quantity of Russian iron which brought down the price enough to shut down a number of forges: "This is a strong proof, how small a quantity of iron more than is wanted, will affect the prices of it." (*Iron and Steel in the Industrial Revolution*, 2nd edition, Manchester, 1951, page 104.) It is true that in the long run demand might have been more responsive, but there was little sign of an expanding market. There was no hunger for iron, and domestic output appears to have remained stationary up to the 1750's. Nor did the imports of bar iron show any sustained increase. (*Ibid.*, pages 111, 123, and 236.) Darby's method was exceedingly slow in adoption.

After all, what was the nature of the market for iron in the first half of the eighteenth century? Besides the diffused demand for blacksmith's iron, nails, tools, cutlery, etc., there would seem to be three sectors which might have loomed fairly large: the government had an intermittent demand for cannon, shipping a fairly steady one for anchors, etc.; and agriculture was slowly adopting the use of iron ploughshares and other implements. None of these sectors appears impressively dynamic or price-elastic, and the expansion of the iron industry after 1750 would seem at first to have been sparked by the demand for cannon in the Seven Years' War and later the American War. The breakthrough occurs after the roughly simultaneous appearance of the puddling process and the steam engine, with its application in blast furnaces and forges. Before 1775, the output of iron probably did not on the average increase by more than 1 per cent per annum; from the 1780's on it grew at a rate of 7-8 per cent. (*Ibid.*, pages 60 and 98.) But there was no sudden decline in the price of iron, and in spite of the efforts made in slack periods by ironmasters like Wilkinson to develop peaceful uses of iron, for bridges, barges and ships, and so forth, this is obviously not an expansion to be understood in terms of what was happening in the iron industry itself. (*Ibid.*, pages 140-141.) What made the difference was steam power, and the fact that it created a link between a consumer goods' industry with a relatively price-elastic demand and the metallurgical industries which faced a much more inelastic demand.

The breakthrough in cotton textiles made it a leading or "primary growth sector," as Rostow calls it, and the fact that it was accomplished by steam set up a chain of external economies in supplementary industries. The nature of these economies is of some interest. Most of them may have been vertical in nature, but the economy is not merely a sequence of stages running from primary to final products. There are

circular flows as well—from iron making to steam engines to coal mining to iron making, etc.

Actually, one of the striking things about at least modern technologies is that to a remarkable degree the vertical relationship predominates. The input-output matrix can be written in an almost triangular form, with very few transactions above the diagonal.[12] Primary sectors at the base of the economy—fuel, basic metals, transportation, etc.—provide inputs to a large number of other sectors of a more intermediate or final character which do not return any inputs to earlier stages of production.

If the flow-matrix which describes an industrial structure is nearly triangular, it follows that where an expansion of final demand (e.g., for cotton textiles) creates economies at an earlier stage of production (e.g., engineering, coal mining, or canal transportation), these will cheapen the inputs into other industries as well. The importance of the breakthrough in cotton textiles was, from this point of view, that it provided a stimulus in the iron industry where the demand for steam engines and textile machinery was felt very keenly. (Ashton, pages 101-102.)

But the hierarchy of industrial ordering is not perfect, and the flow of transactions cannot be arranged in a perfectly triangular matrix. There are some circular flows, and the ultimate importance of steam as an innovation was precisely that it entered into one of these circular or quadratic chains—the one which made up the whole complex of the coal-iron-steam technology. In an input-output constellation of this kind, economies of scale will have a magnified impact, for the economies in one industry will return to it in the form of cheaper inputs. In this sense, the introduction of steam power closed what Dahmén calls a "developmental block"; it made possible and accelerated the adoption of innovations which would otherwise not have been fruitful. (*Svensk industriell företagarverksamhet*, I, pages 67ff.)

To sum up: It would seem that producers' goods industries in England were faced with a fairly steep market barrier in the eighteenth century. This barrier was overcome by the seminal role which steam power came to play both in the textile industry and in the producers' goods industries themselves. The expansion of markets in industries of increasing returns was essential to this process, but the external economies which it generated arose largely among producers' goods industries. It was the spectacular reduction in the cost of cotton textiles—which was of course accelerated by the innovations and economies in the pro-

[12] Hollis B. Chenery and T. Watanabe, "International Comparisons of the Structure of Production." Paper presented at the Cleveland meetings of the Econometric Society, Dec., 1956 (mimeo.).

duction and transportation of raw cotton—which accounted for the expansion of sales and, above all, overseas, but the technological breakthrough was more vertical than horizontal.

In the transmission of English technology to the Continent, two aspects were prominent: in the first place the opportunities of technological imitation and in the second the difficulty of imitating the essential feature of the British venture; i.e., the invasion of the world market in cotton textiles, or, for that matter, in any reasonably price-elastic manufacture. Yet, without an expansion of markets at some level of final demand, the increasing returns of the modern technology in the producers' goods industries could not be reaped. Some things could be done. When the German iron industry begins to grow in the early nineteenth century it was following in the wake of the English development, feeding off the vast variety of uses for iron which were being developed, not indeed in the textile industry, but in a wide range of other areas. We find iron bridges built in Germany as early as 1796, iron water wheels in 1815, and so forth.[13] Military demand was helpful, too, but the striking thing about the imitative ventures on the Continent is certainly their spottiness. One modern ironwork went a long way, and nothing could be a surer indication of increasing returns and market limitations.

It would be absurd not to agree with the traditional view that the railroadization was an essential aspect of the industrialization process in many of the countries on the Continent. Their impact was at least twofold. By lowering transportation costs they expanded markets everywhere, as the canals had done in England, but more radically. Nurkse chides Adam Smith—gently—for his extreme emphasis on transportation and water carriage in determining the size of the market rather than purchasing power, but the magnitudes involved would seem to make this emphasis inescapable. Economics has always found it difficult to cope with the fact that the world is not a point and that distance matters crucially, but how much it matters may be suggested by a hypothetical case. Suppose that a perfectly competitive industry is located in one point, surrounded by a uniform market, with uniform transportation facilities. It is then intuitively obvious—and moreover correct—that the market area of this industry is a circle the radius of which is inversely proportional to the freight rate. The area and size of the market are therefore inversely proportional to the square of the freight rate. In 1839, an American transportation engineer estimated the ton-mile costs by turnpike at 15-20 cents and those by railroad at 2.5 cents.[14] Very simi-

[13] W. O. Henderson, *Britain and Industrial Europe, 1750-1870* (Liverpool, 1954), p. 153.

[14] Kent T. Healy, "Transportation as a Factor in Economic Growth," *J. of Econ. Hist.*, Sup., 1947, p. 84. For a demonstration of the proposition about freight rates, see Martin J. Beckmann, "Bemerkungen zum Verkehrsgesetz von Lardner," *Weltwirtschaftliches*

lar ratios are given by Heckscher in his comparison of Swedish horse-carriage and railroad costs at a much later date.[16] In terms of our hypothetical example this means an enlargement of the market by some fifty times.

But the first impact of the railroad was clearly as an item in final demand—as an investment project which played a central part in the expansion of the iron and coal industry on the European Continent and, for that part, in America as well. Although at first covered by imports, the demand for rails and rolling stock was one of the sustaining elements in the rise of the modernized metallurgical industry on the Continent. When all this came about, however, it was clearly not the result of rigorous calculations of profitability. The ideology of industrialization which Gerschenkron has described so vividly, found its most universal language in the mystique of railroadization. It is difficult to imagine either European or American nineteenth-century economic history without the fervor and passion of the railroad movement, and the fact that the railroads so frequently failed to show themselves profitable ventures only underlines the importance of the faith which created them.

There was an end to railroad building, however, and much depended on what happened after that. At the level of final demand there were few comparable areas for chiliastic investment. In domestic consumption the limiting factor was probably, at least in Europe, the slowness of agricultural development where social rigidities and the shortage of capital and entrepreneurial talent was particularly marked. State action was important here, and for this and other reasons the German development seems to have been superior to the French, to cite the conventional pair. The railroads helped, as just suggested, in expanding markets, but there is little evidence of rapid and widespread modernization of consumers' goods industries in the early phase of industrialization—except, to a varying degree, in textiles.

It was in exports that the significant expansions seem to have taken place. The German metallurgical and engineering industries, for instance, managed to assert themselves beyond their native boundries, and elsewhere in a large number of countries the strong staple exports seem to have been pace setters: American cotton and wheat, Scandinavian timber, Canadian wheat, etc. Around these sectors we find very similar developments of supply sectors in the intermediate product field, with vertical external economies emanating from what Douglass C.

Archiv, 1952, pp. 199 ff. Lardner's proposition (erroneously couched in terms of speed rather than freight costs) is in Dionysius Lardner, *Railway Economy* (New York, 1850), pp. 36-37.

[16] Eli F. Heckscher, *Till belysning af järnvägarnas betydelse för Sveriges ekonomisk utveckling* (Stockholm, 1907), pp. 87-88.

North calls the export base but created in primary sectors such as metallurgy, engineering, transportation, and other social overheads. ("Location Theory and Regional Economic Growth," *Journal of Political Economy*, June, 1955.) From these areas, they bounced back, characteristically at a later time, to consumers' goods industries protected by tariffs and transport costs. The delaying role of market limitations in this process is very evident in, e.g., the engineering industries, of which Dahmén's study of the Swedish case provides numerous illustrations. (*Svensk industriell företagarverksamhet*, I, pages 66 ff.)

In the Western experience the simultaneous expansion of a number of manufacturing industries on the consumers' goods level does not seem to have been a prominent feature in the industrialization process. What is far more striking is the role of the investment and export sectors and the role of agricultural development. This is, of course, no more than a hunch, but there are strong theoretical reasons to expect something like this. The doctrine of balanced growth rests on the assumption that the expansion of an industry creates economies for another. But, as Marcus Fleming in particular has stressed in his critique of this argument, such an expansion also creates diseconomies (page 246). Industries are not only occasionally complementary; they are also, in most cases, competing for factors of production. In many conceptions of the business cycle it is precisely because complementary relationships between industries are overshadowed by competitive ones that the boom is checked. Similarly, it is evident that in the context of growth, the expansion of an industry will generate diseconomies in other industries if it entails an increase in factor use. In the case of factors which are intermediate products, vertical economies might arise but the limitations in the supply of labor and capital will remain. It is only when demand is inelastic that a development which raises productivity in some industry will not create this type of diseconomies in other industries, for it will then release factors in technological unemployment. It is for this reason, it seems, that the balance between agricultural and industrial development is the only facet of nineteenth-century economic development which is to be understood in terms of the external economies arising from a horizontal advance. Rising productivity and income in the industrial sector and, above all, the penetration by the railroads accounted for the enlargement of agricultural markets which made agricultural innovation feasible, and the effect of this, in turn, was to release labor for the industrial growth sectors. That this process in very large part came to operate on an international rather than a national scale does not reduce its importance, nor does it alter the fact that within the national economies as well this was a hitchbound process where state policy was an essential factor.

Outside of agriculture, the economies which a broad frontal attack of industrial expansion might have created on the demand side were offset by diseconomies on the supply side. The net external economies to be released by a sudden spurt of balanced growth were smaller and would not play a crucial part in the transition from stagnation to growth. The most prominent external economies were those arising in producers' goods industries where the economies of scale were more evident. We would expect, therefore, to find great spurts only when there was simultaneous expansion of industries linked by vertical market ties. But the more pronounced these vertical economies and the swifter the expansion which gives rise to them, the greater will be the diseconomies created in other sectors of the economy as resources are absorbed in these sectors of rapid expansion. There will be a tendency for one sector—or a complex of industries—to dominate the growth process at least for a time.

This, obviously, is not a picture of broad, balanced growth. Rather it is a picture of the simultaneous widening of one vertical pipeline, expanding the flow through it but reducing the pressure in parallel ones. This image is not entirely adequate, for the developments in basic industries will generate economies everywhere by lowering costs of transportation and energy, by inducing new uses for basic metals, and so forth. But these economies will be offset by the diseconomies just mentioned and probably assert themselves only gradually.

IV

If indivisibilities and increasing returns do not prevail, the operation of the price mechanism will adjust the growth of supplies to the pattern of demand without any hitches. This may often be the case. But it is not the pattern of growth as a whole that is at issue in this context. The question which the doctrine of balanced growth raises is only whether external economies account for sudden changes in the rate of growth and for the growth pattern which accompanies them. My conclusion is that they might go a long way towards explaining spurts in individual sectors of the economy as well as the prominence of specialization and "leading sectors" in the early phases of economic growth, but that there is no evidence, historically, that sudden forward movements along all the fronts of the economy have played an important part in releasing economic growth.

It follows from this that we should not expect discontinuities in overall growth necessarily to be very abrupt. A few sectors of the economy, or for that matter a few regions, may turn into "growing points," developing rapidly without pronounced impact on other sectors but also

without being held back by sluggishness in them—in fact this is likely to happen, and seems to be what we generally observe. Retardation may eventually set in when initial gains have been exploited, but a breakthrough in another sector may offset this and even accelerate the rate of growth. Over-all growth rates may thus rise fairly gradually as the number of growth sectors is increased, and the take-off or big push need not be very abrupt or condensed in a short period. Some sector of final demand has to be sufficiently dynamic or elastic, but it is not likely to be domestic consumption. The pace of growth seems to have been set by the other components of final demand: exports, investment, and occasionally government spending.

If the doctrine of balanced growth thus does not describe our experience very adequately, it does, nevertheless, focus attention on the search for markets and on the interaction and interrelatedness of economic advance in various parts of the economy and the world. We have hardly begun to unravel the strands in that fabric. Rostow has expressed the hope that input-output studies might clarify the process of interaction between principal growth sectors, and even a very crude attack along such lines would be illuminating. But the first step towards such an understanding of the growth process is simply to pay as much attention to the growth of an industry's market as is usually lavished on the growth of its capacity.

DISCUSSION

RUDOLPH C. BLITZ: It is my understanding that Professors Hughes and Ohlin have used somewhat different concepts of "balanced growth" and therefore some clarification of terminology seems warranted. For some people balanced growth may suggest some kind of a master plan. This master plan would be in the nature of an input-output matrix calling for balance not only in the composition of final goods but also for balance vertically in the different stages of production. Just how complete such balances would have to be to deserve the approbation of balanced growth would be a matter of judgment and tolerance. The second concept of balanced growth is a more modest one. It focuses mainly on the possible mutual sustaining expansion of a number of final goods markets. This is Nurkse's concept when he states in his *Problems of Capital Formation in Underdeveloped Countries*: ". . . the main point is to recognize how a frontal attack . . .—a wave of capital investments in a number of different industries—can economically succeed while any substantial application of capital by an individual entrepreneur in any particular industry may be blocked or discouraged by the limitations of the pre-existing market." (Basil Blackwell, 5th ed., page 13.)

Nurkse views his concept of balanced growth as a modification and synthesis of Say's Law and Schumpeterian ideas on economic development. (*Ibid.*, pages 11-13.) Supply will not always create its own demand, yet it may when things are balanced. The notion of broad waves of simultaneous innovations is really the crux of Schumpeter's cycle-and-growth theory.

Both Hughes and Ohlin are critical for different reasons of the concept of balanced growth and hold that it is not likely to explain much about the historical processes of economic development. It seems to me that Hughes uses a concept of balanced growth which is akin to the master plan or input-output matrix mentioned earlier and is actually very much different from Nurkse's concept. Hughes rightly concludes that the path of growth of Western capitalism has not conformed to any such master plan. Professor Ohlin's concept of balanced growth, on the other hand, seems to conform closely to Nurkse's notion of balanced growth, but he too rejects this framework for explaining Western economic development.

Hughes argues that it was really the imbalance rather than the balance of interrelated technological processes, as in the well-known case of the cotton textiles, which was the vehicle of economic development of the Western world. While I fully agree with Hughes as to the great importance for economic growth of these temporary vertical disequilibria, I cannot agree with Hughes that the study of the interrelations of these temporary technological disequilibria shows ". . . the notion of balanced growth as currently employed by some economists is misleading." By Hughes's standards, then, for balanced growth to exist certain criteria of vertical balance would have to be satisfied. Nobody has a monopoly on such terms as balanced growth, but according to my understanding, Hughes and Nurkse are using this term to describe different sets of phenomena.

Hughes shows with the help of Folke Hilgerdt's celebrated study of *Industrialization and Foreign Trade* that intensification of foreign trade in many important instances has not led to greater income equality but on the contrary to greater income inequality. I agree with Hughes that the classical concepts of "productivity theory" and of "the vent of surplus" as recently revived by Myint are more helpful for the explanation of many historical developments than the more static "comparative cost theory." Yet I have also found comparative cost theory a useful guide for the understanding of many historical situations, but cannot here open a protracted debate about the purposes and applicability of static theory. If as a result of opening up to international trade country A should have a population explosion, whereas the population in country B should become stabilized and this in turn should lead to great differences in income between country A and B, one could hardly blame the theory of comparative advantage for all these troubles. I may also add that discussions about the virtues and vices of these theoretical concepts strike me as somewhat removed from the issue of balanced growth. Hughes cites Schumpeter's theory of innovation, apparently as an antithesis of the balanced growth doctrine. But as already pointed out, Nurkse actually acknowledges the assimilation of Schumpeterian ideas in his concept of balanced growth. He states explicitly: "Schumpeter's theory seems to me to provide the mould which we must use, although we must use it with slightly different ingredients." (*Op. cit.*, page 12.) Schumpeter's concept of the cyclical upswing resulting from a cluster of innovations and the notion that the confidence of one entrepreneur may come to grief, whereas that of many may be self-justifying, is almost identical with the concept of balanced growth. Whether Nurkse's concept is very useful is a different matter.

Professor Ohlin ranges very widely both quantitatively and qualitatively. He comes to the conclusion that the doctrine of balanced growth in the sense of simultaneous widening of many markets does not really fit the historical evidence of economic development well. While I am in agreement with Ohlin's general appraisal, I believe nevertheless that the balanced growth thesis, by focusing on the economics of market expansion, is helpful to the understanding of some aspects of Western economic development. But then Allyn Young or Adam Smith may be more relevant here than Nurkse.

Ohlin argues that balanced growth should be statistically discernible as a big push or a big jump. There seems to be disagreement among the authorities just how big a jump is necessary and whether it should be a broad jump or a high jump. Perhaps we should recognize that different obstacles may require different jumps. Ohlin rightly points out that the discontinuities in development we find are in most instances not terribly sharp. However, Professor Galbraith notwithstanding, we live—or at least our forefathers lived—in a niggardly world and we should not expect too much. It is a matter of judgment whether one should consider a rise in the rate of growth of per capita income from 2.5 to 4 per cent, such as took place in Germany between the 1870's and 1880's, as significant. I personally would consider this quite high. Moreover, the big push relevant for the concept of balanced growth may be

shown better by the change in the rate of increase of aggregate income rather than by the rate of increase of per capita income. It is to be noted that the concept of balanced growth à la Nurkse is very much akin to Adam Smith's ideas on the effect of population increase on economic growth. Population increases may shift demand functions to the right and greater specialization may cause cost curves to shift downward. The above does not mean to imply that population increases may not in many other ways constitute a formidable drag on economic development. I merely wish to argue that perhaps the big jump we should be looking for, if we deal with the issue of balanced growth, is one in aggregate demand; and since increases in aggregate demand may be the result of population increases, we should not correct for these population increases.

I agree with Ohlin that historical research has given us much more knowledge about conditions of supplies and their changes over time than we have been able to obtain about demand phenomena. This does not seem to be due to a lack of interest in demand phenomena but rather due to their elusiveness. Actually much of the historical shifts of supply curves to the right were responses to shifts in the demand curves to the right. This is the process of specialization so much emphasized by Allyn Young. For example, while we know virtually nothing about demand elasticities of earlier periods for various types of clothing, we do know that the gradual dying out of the putting-out system was largely the result of the fact that entrepreneurs eventually could offer much more steady employment as compared to earlier sporadic orders. Many other cost reductions can be explained in the same manner. The wandering peddler, tailor, and furrier were really in economic terms similar creatures to the wandering minstrel—that is to say, the result of very limited local markets. We do not know what the demand elasticities for these services were. There is no doubt, however, that their disappearance meant the achievement of substantial economies and was largely the response to shift of the demand curves. Once in a while one can observe an interesting reversal of this trend. While in earlier times it was customary for horses to visit the blacksmith, the horse population in the United States has of late become so reduced and scattered that now the wandering blacksmith visits the horses. The disappearance of many small scattered inventories and the reduction of inventory output ratios, which must have resulted from denser and quicker traffic, are all economies resulting from shifts of demand.

Ohlin observes that agriculture, commerce, and manufacturing gave each other only weak support for expansion for the first half of the eighteenth century in England. But nothing he says is really incompatible with the notion that this mutual interaction may have been quite drastic during the second half of the eighteenth century.

In the latter part of the paper Professor Ohlin's sweep is so broad that it is not always clear to me just what period or part of the globe is being discussed. He seems to admit that there was some widespread balance in the growth of textiles and agriculture during the nineteenth century, but that we cannot find many such balances in regard to the other industries. By saying that much he may have given the balanced growth concept more credit than he cares to.

After all, in the nineteenth century most consumers had little left after expenditures on shelter, food, and clothing.

In conclusion, I want to say that I consider the concept of balanced growth hardly much more than a truism. While we all know that supply will not always create its own demand, we also know that supply may create its own demand. At the same time, the doctrine of balanced growth per se seems to have only limited applicability to Western economic development.

THEODORE MORGAN: These are instructive papers. They indicate some logical relationships to expect, some historical patterns to tie in with the logic, and by their omissions help us to understand the nature of our ignorance.

Hughes's paper was limited to international trade and balance growth; Ohlin had the broader canvas—economic history and balanced growth—which made his task easier by removing a limitation. Despite the difference in subjects, the parallels are considerable.

In these comments on the papers, let me first satisfy a propensity to quibble. Ohlin uses the acceleration principle to explain a historical phenomenon: "An increase in final demand in any sector above the most basic ones will produce repercussions in earlier stages, and therefore the output of intermediate and primary commodities has to increase at a higher rate than that of highly fabricated ones." I am not sure that this could be proved for primary commodities; an index number problem of some difficulty is involved at the least. And in general, does the acceleration principle work well over the course of decades? In part it works better than in the short run, for swings in excess capacity do not limit it; but in part it works worse. Technical change makes intermediate products more durable, lighter, and more efficient; and this greater effectiveness, plus more effective economizing of primary commodities, makes it thoroughly possible that in sector after sector, inputs may not rise faster than final output.

Hughes reasons that international trade's tendency to equalize factor prices does not mean a tendency to equalize factor incomes. But only a relatively strong inverse relationship of factor price to volume of employment can explain a lack of positive correlation between prices and incomes. I suggest this strong inverse relationship is unlikely as a general experience.

And then, there is a worry over semantics. Hughes concludes that good versus poor domestic responses to trade can be attributed to "relative impediments to factor mobility, given the factor endowments." The qualification is important: factor endowment can change through changed technology (anthracite was once black rock) as well as through changed physical quantity. But aside from the qualification, is "factor mobility" the only box we can put the historical facts in? One could phrase the history differently, I think, and on occasion explain the domestic response on an economy by, for example, the extent of social resistance to innovation or (what may be crucial) change in human qualities.

This ends my quibbles. I pass on to the main points I have gained from the papers.

Both Hughes and Ohlin find balanced development a weak reed to lean on as a guide to policy. Hughes notes an obvious case where it makes sense—balance vertically: inputs at one stage will match outputs at the next earlier stage. And he finds balanced growth something that may have happened *ex post* "by the ceaseless ebb and flow of innovations and changing factor combinations." This judgment is prudent. We ought to be cautious in predicting very far ahead the extent to which balance, by some plausible definition, will turn out to be efficient.

Unbalanced growth is to be expected in the numerous cases where competition between industries for factor supplies is dominant—both papers emphasize this—and is very possible, where competition for market favor is important. In addition, there is a boomerang effect that produces unbalanced growth: where cost-reducing innovations in an industry (Ohlin cites the coal-iron-steel complex) lower costs in and so expand that same industry.

These three causes of unbalance have to be swamped by expansion in some sectors inducing pecuniary economies in other sectors and/or expanded demand in other sectors for balanced growth on net balance to be encouraged. Such offsets may or may not exist.

Both papers emphasize the influence of market demand, as a historical limitation on growth. They are, with Nurkse, dethroning Say's Law all over again in this context. I have no quarrel with such a view as a historical generalization—but it can be highly risky as a guide to policy.

Underdeveloped countries, like developed ones, nowadays try consciously to manipulate total demand in accord with what they think is the public interest. Nothing is simpler than to create more money demand. Headaches would be fewer in underdeveloped countries if this were more difficult. One main purpose of central banks is precisely, by nagging and wheedling, to make money expansion less easy.

Evidently it is real demand that one wants to raise; that is, production. But to raise production in different lines means, even if we wrongly forget the possibilities of foreign trade, a hardheaded emphasis on productivity—not simply on balance. And when we remember foreign trade possibilities, emphasis on productivity—that is, comparative advantage—becomes all the greater.

THE ECONOMICS OF GOVERNMENT EXPENDITURES

USING MARKET MECHANISMS IN MAKING GOVERNMENT EXPENDITURE DECISIONS

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I

Interest in the economic problems of government expenditures has been recently reawakened because the economics of taxation has been rather thoroughly explored, given the limitations of the tools possessed by most economists, and because government expenditures now constitute a sizable proportion of gross national product with little expectation that this proportion will be reduced. Although we might wish to make certain sacrifices in the efficiency of resource use in the interests of achieving one of a certain class of income distributions, we would like to know what sacrifices have to be made in having government produce certain patterns of service. It is my belief that we are not utilizing adequately the available guides in making judgments about the pattern of government services. I shall try to show briefly why I hold this belief and make some conjectures about some features of the pattern of government services if certain criteria were utilized in deciding how much to produce.

I cannot offer any generally defensible solution to the problem of how much government should produce of each good or service, nor do I believe that such a solution can be offered in the absence of crucial information about the values of some important kinds of services. In many respects, I probably am only restating ideas of Wicksell and some of the Italians who were concerned with this problem in the late nineteenth and early twentieth centuries.[1]

II

It would be surprising to most economists if, as a result of accurately measuring all of the necessary production functions, resource supply functions, and consumer preference relations and computing optimal patterns of resource allocation, one were to discover that the amounts of goods and services produced by government were the correct ones. Most of us claim that too much of some things and too little of others are

[1] I am quite unable to acknowledge many sources of ideas with the few footnotes at my disposal.

being produced by government, although we do not agree with respect to which things are being provided in excess and which are in short supply. And only rarely would one find a person who claims to have much faith in his guesses about what would constitute the best pattern of publicly produced goods and services.

It also would be surprising if our computations revealed that too little wheat was being produced. Most of us are willing to state that wheat is in excess supply on the basis of knowledge that the price at which the market would clear is considerably below that currently prevailing as a result of government programs. We do not believe that we need to know accurately the demand function for wheat, the cost functions for various wheat producers, nor everything about the rest of the economy in order to make such a statement.

This paper is concerned with answering very crudely the question: To what extent could the provision of governmentally produced goods and services be organized so that we could determine whether too much or too little of a particular good was being produced in the same way as we can determine whether there is too much or too little wheat? Or, stating the question in slightly different language: How can market criteria be applied to the determination of the optimal amounts of some goods and services produced by government and what are some of the implications of using such criteria for the organization of such production?

By a market I shall mean a mechanism by which offers to purchase or sell various quantities of a good at various terms are made known. From knowledge of offers to buy and sell at given terms together with the conditions determining the nature of the offers, one can sometimes infer whether producers are providing the appropriate amounts of particular commodities. The classic situation to which economists frequently refer is that in which (1) each producer offers to sell a particular quantity at a price equal to the marginal cost of producing that quantity, the amount which he produces does not affect the technological conditions of production for any other producer, and marginal production costs increase because of technological production conditions or limitations on the amounts of some resources available to the producer; and (2) each consumer chooses a collection of goods such that the ratios of marginal utilities are equal to the price ratios, and the consumption pattern of any consumer does not enter directly into the utility function of any other consumer. When there is neither excess demand nor excess supply of any commodity, community welfare is optimal in the sense that no one can be made better off without making some other person worse off. If there is excess demand for a commodity,

more of it should be produced since what consumers are willing to give up for some additional amount exceeds what must be sacrificed to provide it. And, if there is excess supply, too much is being produced in that what would be sacrificed in cutting the output of this commodity by some small amount is less than what could be gained by the expansion in the outputs of other commodities.

Among economists who accept the welfare criterion set forth above, acceptance of excess demand and excess supply as the criterion for too little or too much production of a commodity depends upon beliefs about how closely are approximated the conditions for competitive equilibrium and the absence of external economies in production and consumption. For example, monopoly in a single sector of the economy provides a basis for not considering the production pattern at which the market clears as an optimal one. The performance of one sector of the economy cannot be evaluated accurately without references to the other sectors. A similar difficulty is posed by the existence of external economies or diseconomies in production or consumption. Market valuations do not reflect accurately the relative social benefits and social costs of various commodities.

That the performance of one part of the economy cannot be evaluated without reference to the other parts poses problems with respect to the organization of the economy and the kinds of rules that decision-makers should follow. In the event of monopoly elements or external economies and diseconomies in production and consumption, the rule "produce that amount such that price is equal to marginal cost" is not appropriate for obtaining the optimal production pattern. However, in principle, another rule—such as "produce that amount such that price is equal to a constant multiplied by the marginal cost"—could be formulated for each producer and a best solution could be obtained. Market information would still be useful in guiding decisions and evaluating performances. The problems are those associated with determining the degrees of monopoly and the extent of the external economies or diseconomies in production and consumption.

A good or service which is such that, once it is made available, consumption by one person does not diminish the amounts available for other persons, presents a different kind of problem. Such goods "cannot be divided up into units of which any single individual can be given exclusive possession,"[2] and a relation between price and quantity demanded that describes preferences for such goods in the same manner as does a price-quantity relation for other goods probably cannot be obtained. Voluntary contributions—as are the payments for goods that

[2] Howard Bowen, *Toward Social Economy* (Rhinehart and Co., 1948), pp. 172-173.

are sold—would be substantial underestimates of the relative values of various quantities. A market, in the sense defined above, would be of little use in guiding production.

Thus, except for goods of the kind just discussed, it would be possible—in principle—to ration commodities by the price mechanism and to employ market data in determining how much to produce. External economies in consumption and production, indivisibilities in some factors leading to increasing returns to others, monopoly elements, etc., may make application of the pricing principle more difficult. But their existence is not sufficient for abandoning it.

The class of commodities which are of such character that they should not be priced includes many services production of which requires a substantial portion of the U.S. governmental budget. Expenditures for national defense and the resources required to enact legislation and operate the judicial system fit into this category. I can say little about what quantities ought to be produced except to repeat a suggestion of Wicksell that an amount is too large if there is no tax pattern for financing it that would receive a unanimous vote of the population.[3] Also, whatever quantities produced should be produced in a way such that the sacrifice of other commodities is a minimum. Aspects of this problem are being attacked by the techniques of operations research. However, attaching to resources used by agencies such as the military the same relative values as are associated with these resources in the private economy and requiring that the choice made minimizes cost could accomplish the desired minimization. Application of this procedure has some interesting implications for the allocation of manpower and the appropriate interest rate to employ that will not be explored here.

III

The cases which are of primary interest to me are those where prices can be used as rationing devices and as guides to how much to produce. The choice as to whether a particular commodity should be produced by government or by private producers should not rest upon the existence of external economies or diseconomies in production or consumption or upon the presence of increasing returns, but upon whether government can produce more efficiently than private producers. External economies or diseconomies in consumption should determine who should be taxed and who should be subsidized, but not whether the good should be produced by government. The taxes and subsidies are

[3] Knut Wicksell, "A new Principle of Just Taxation." Translated from German by J. M. Buchanan and appearing in Richard A. Musgrave and Alan T. Peacock, editors, *Classics in the Theory of Public Finance* (Macmillan Co., 1958), pp. 72-118.

required independently of which kind of unit produces the good. Thus, government might well produce certain commodities for which there are no external economies in production or consumption, and private producers might produce goods which are characterized by these phenomena.

I wish to make some conjectures regarding the outcome of shifting certain resource allocation decisions from the public sphere to the private one or of enjoining public agencies to sell their product producing any amount at minimum cost and producing that amount such that price is equal to marginal cost. As examples I shall consider the production of education—a case in which pricing is not employed as a rationing device nor as a guide to production—and highway services—a case in which pricing is attempted but less effectively than could be the case.

Of the educational services produced by agencies that are governmentally controlled, some are such that there are true external economies in their consumption; i.e., the amount of such service consumed by one person enters directly into the utility functions of other persons. Let us call such services "elementary education." They probably correspond to the training offered at elementary schools, but I wish to avoid argument as to what such things are rather than how they might be treated. The other category of educational services is obtained by consumers solely because of their impact upon occupational choice and earnings—in which case they can be treated as investment goods—or because the knowledge is desired for its own sake—in which event they can be treated as consumption goods. In either event, it will be assumed that such services are not characterized by external economies; i.e., that investing in "education" is like investing in any other capital asset and that the consumption good is such that one person's consumption does not enter directly the utility functions of other persons. Let us call this kind of education, "higher education." Both kinds typically are produced by both private and public agencies, the public agencies usually providing them below cost.

Assuming that the economy is competitive and that the terms for financing higher education as an investment good or a consumption good are the same as those for financing other investment goods and consumption goods, there is no reason for producing amounts of any kind of such education at a price less than marginal cost. This implication follows from the assumption that there are no external economies in the consumption of higher education. The terms for financing educational expenditure probably are more favorable than the terms for financing other types of expenditure for some persons; but they may be much less favorable for others. This could justify pricing higher education at less than marginal cost. However, putting the

financing of such education on the same terms as those for financing other investment or consumption goods is a more appropriate step.[4] The loan programs of the federal government and some educational institutions are moves in the right direction though they probably are not large enough.

Because elementary education is a commodity for which there are external economies in consumption, there are grounds for pricing it below cost or for providing subsidies to consumers conditional upon their expenditure for such education. In the United States as well as in many other countries, such education is made both free and compulsory; i.e., one need not pay for it, but he must consume it. However, that a good must be consumed does not imply that it must be produced by government.

The belief that there should be publicly operated primary and secondary schools probably stems not only from the notion that education at these levels should be free and compulsory but also that the state should control the curriculum. Reasons for state control of the curriculum have included the desire for religious neutrality and for an "unbiased" view of history and currently include the desire to prevent "subversive" (and unorthodox) ideas from being taught in the public schools. Although the state has attempted and frequently has been successful in controlling college curricula, the rationale has been that the curricula should be subject to state supervision because the educational institution is state supported rather than that the institution should be state supported in order that the curriculum might be controlled. Public operation of higher educational institutions might be considered as a historical accident rather than as an objective in itself. There is no necessary relationship between governmental aids to higher education and govermentally operated institutions of higher learning.

What are some of the features of the pattern of higher education if there were strong incentives to produce any amount of it at minimum cost and to produce that amount at which price is equal to marginal cost?

To consider higher education as a single commodity is somewhat like considering restaurant meals as a single good. In fact, the analogy may be a useful one—a university's faculty, buildings and grounds, football team, and janitors corresponding respectively to a restaurant's chef, decor, entertainment, and dishwashers. Just as there are many combinations of components offered by various restaurants in accordance with

[4] Some newspaper reports that have come to my attention indicate that Professor Seymour Harris is making a detailed analysis of how to finance higher education by loans and also has suggested that higher education should be priced at marginal cost. See, also, Milton Friedman, "The Role of Government in Education," in Robert Solow, ed., *Economics and the Public Interest* (New Brunswick, N.J., 1955), pp. 145-153.

tastes, incomes, and costs, one would expect variation in the various components of higher education. Since I know relatively little about tastes, I will not venture a guess as to the precise nature of the outcome under the procedure I have suggested. Instead I will indicate the ways in which I believe the outcome would represent an improvement over the existing situation.

First of all, combining a capital market for purchases of higher education that is comparable to that for tangible assets with producing that amount such that price is equal to marginal cost should result in an improved allocation of higher education among consumers. Prices below marginal cost and less favorable terms for borrowing to obtain education lead to some persons receiving the service who would not be willing to do so if they had to pay its cost and some persons not receiving it who would be willing to pay its cost if they could obtain credit. Both types of errors should be reduced.

Second, one would expect the costs of providing a given level of service to be reduced. In particular, one would look for fuller utilization of plant and equipment and reductions in administrative costs. Comparisons between private schools that are operating primarily from tuition revenues and state supported schools should indicate the lower limits to such cost reductions.

One might expect tuition rates to differ according to differences in costs and faculty salaries to be somewhat less standardized within a university than currently is the case. Also, one might expect higher amounts of specialization than one finds in state supported universities; i.e., rather than many universities offering second-rate instruction in many different fields, a university might find it profitable to specialize, as do medical schools.

Regardless of the pattern, the question of whether we need more higher educational facilities could be answered more satisfactorily than is true at the present time.

Highway services constitute a commodity group where price-cost criteria should guide their production and allocation. Because it is believed that the costs of collecting from users would be relatively high compared with production costs, highway services have been produced almost exclusively by government. However, an attempt has been made to price them. There are toll roads, motor fuels taxes, approximate weight-distance taxes for passenger vehicles; there are supplementary weight-distance taxes for trucks and buses; and there are license fees for heavier vehicles graduated somewhat in accordance with relative costs imposed by vehicles of different classes. Except for charges that ought to be levied against and collected from the military, the highway system comes close to paying for itself. Misallocations result from

failure to use the pricing principle as extensively as it could be used.

Some implications of using more effectively the same kinds of fees as are now being employed to ration highway services and employing more appropriate revenue-cost comparisons to making decisions about the kinds of roads that should be located at various places can be stated even though one knows rather little about the demand for highway services.

1. If prices and costs are appropriately determined, not only the highway system as a whole but each separate entity should "pay for itself" (but not make a profit)—when the system is optimal. That highway users should pay for the highways has much, though not universal, support. However, that each clearly distinguishable sector should pay for itself is less widely supported—except possibly for toll roads. In particular, it is my belief that generally there has been relative overconstruction of rural nontrunk highways, although this belief can neither be adequately supported nor refuted with existing data.

2. The prices that have to be paid for resources are taken as reliable estimates of the value of the product that has to be sacrificed in order to expand production of one good. Government pays the same prices for labor and materials as do other users. However, it borrows money at more favorable terms (at a lower rate of interest) than does the typical private borrower. This lower interest rate reflects the confidence of the lender in government's ability to repay—not in the relative merits of projects. If government borrows at 3 per cent, whereas private producers borrow at 6 per cent, and both government and private producers use amounts of capital such that rates of return are equal to borrowing costs, government will be using too much and private producers too little. Government also should not invest in projects unless they would yield, say, 6 per cent—if capital is to be allocated in the best manner. Thus, decisions to build highways and to make other governmental investments should not be based on the rate at which government can borrow but on the rate of return on capital in other uses.

3. Tax differentials, as well as differentials in costs of borrowing, affect the relative prices of governmentally produced goods in comparison with privately produced goods. In the transportation field are special excise taxes affecting some kinds of transport (but not others) that encourage use of the highway system rather than alternative forms of transportation. These taxes ought to be abolished. However, there are also property taxes applying to all private property. I do not consider an evaluation of the property tax to be appropriate for this discussion. However, to obtain a better distribution of resources among various kinds of transportation, imputed property taxes on highways ought to be considered in arriving at highways costs, just as a "shadow"

interest rate of, say, 6 per cent, rather than the cost of borrowing ought to be employed.

It should be noted that if the highways were to pay for themselves in the sense of yielding revenues equal to costs, including the imputed ones, there would be diversion of highway revenues to the general governmental fund. This diversion would be equal to imputed property taxes plus, say, 2 or 3 per cent of capital outlays.

4. Although it is not economically feasible to collect tolls except on a very small percentage of the highway system, tolls can be equitable rationing devices and can permit accurate accounting of the revenues attributable to the highway system. Rather than minimizing the number of toll roads, I would employ them wherever feasible. However, certain practices in administering toll roads are not consistent with best use of the highway system. In particular requiring that toll roads pay for themselves out of tolls is uneconomic. Motor fuels tax receipts also should be credited the toll roads. To do otherwise will result in underutilization of such roads and overutilization of freeways. Also, tolls should be much more flexible than toll authorities have been inclined to make them in the past. Varying tolls with the demand would smooth the traffic flow and could make it approximate more closely that for which the road was designed. Ideally, tolls might fluctuate as do the odds at pari-mutuel betting booths or as do stock market quotations. In areas such as Manhattan where access is by tunnel or bridge, tolls to Manhattan certainly should exceed those away from the island during the morning rush hours, and perhaps vice versa during the evening hours—although if there are too many autos in Manhattan there is no reason why entry fees should not always exceed exit fees.

Fluctuations in tolls not only would aid in controlling traffic flows. They also would permit improved estimates of the demand for highway services. Such data are required for determining how much investment to make in highway facilities, and very few of them are available.

IV

I have omitted detailed discussion of activities undertaken by government where a market might be used to minimize the cost of whatever is to be done, even though the scope for economies may be greater in this area than it is in those where the market might also be used to make decisions about how much to produce. Permitting as many rounds of bidding on government contracts as are required to achieve no further lower offer and contracting for services such as tax collecting, garbage disposal, street cleaning, snow removal, and a host of other activities performed by government are among what I would consider the more obvious possibilities.

THE ECONOMIC ANALYSIS OF DEFENSE: CHOICE WITHOUT MARKETS*

By Fred S. Hoffman
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It is all too evident these days that the job of providing for national security consumes great quantities of scarce and useful resources. And the threats these expenditures are intended to avert or allay are among our major sources of anxiety. The questions confronting the makers of military decisions are how much to spend on military preparedness, what allocations to make among the many sorts of military capabilities competing for resources, and how best to use the weapons systems which have been purchased and are in being.

The first two questions, at least, fall well within the boundaries of economic science as set by some definitions. But apart from any commitment to a particular definition of our discipline, the family resemblance between the national security problem and the subject matter of economics is clear. The problems are close enough in form to warrant a presumption that at least some of the more general concepts and propositions of economic theory can be applied to military decision making.

The Limited Usefulness of Markets for Military Resource Allocation

The first and perhaps dominant reason limiting the applicability of economic theory to military decision making is simply that military decisions are made for the most part through institutions having little in common with markets. Economics has sometimes been called a science of choice; and so it is, at least in part. Still, the bulk of the literature of economics is not concerned with abstract choice, but with choice in a market context.

One way in which the economist can apply his talents to military problems is to search for ways of using markets in military planning and operations. Some useful suggestions of this sort have in fact been made. They range from the use of civilian contractors to perform given tasks (specified kinds of maintenance on particular items of equipment) to the more complex industrial funds.

The Military Sea Transport Service is an example of an industrial

* I am indebted for their suggestions to several of my colleagues in the Economic Analysis Department of RAND, but most particularly to Albert Wohlstetter who will, I hope, recognize the paper's central ideas as his own. Responsibility for the paper's defects rests, of course, with the author.

fund. It charges its military customers for services performed and actually has some flexibility to determine its scale of operations. There are many problems in price determination for such an enterprise and these may offer fertile fields for exploration by economists. But the device has a basic limitation which is shared by all attempts to use markets in military resource allocation. This limitation would be inherent in military decision making even if we resorted to some such improbable policy as developing a military services industry, consisting of a group of private competitive firms, vertically integrated but atomistically competitive, of course. Buying military service from this modern *condottieri* would still confront us with the problem: What is the amount and type of military service desired? Even apart from this question, it is by no means self-evident that such "firms" could perform characteristically military functions more efficiently than do conventional military organizations. (See below.)

The "public goods" problem which has figured most recently in the Samuelson, Margolis, and Enke papers stands in the way of answering this question by recourse to markets.[1] A public good, Samuelson says, is one ". . . which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good . . ." (1954, page 387). National defense may well be the public good par excellence, which does not mean that even it is a pure public good. If the objective of national military expenditure were merely the preservation of the integrity of the federal government, we should be close to the pure case; but this is a highly incomplete specification of the objectives of defense expenditures. There are many alternative ways to protect our sovereignty and governmental institutions; and they have radically different implications for different individuals. A city protected by a wall and falling to besiegers if a breach is made is only one image of warfare. Another is the shield which can protect one part of the body only at the cost of exposing some other part. An antiaircraft missile battalion on Long Island contributes more to the security of a New Yorker than does one in Los Angeles, but both have some effect on whether the nation wins or loses a war.

To the extent that this kind of interdependence exists, the market will fail to reach social optimality.[2] The difficulty is not limited to de-

[1] Paul A. Samuelson, "The Pure Theory of Public Expenditures," *Rev. of Econ. and Statis.*, Nov., 1954, pp. 387-389; Stephen Enke, "More on the Misuse of Mathematics in Economics: Rejoinder," *Rev. of Econ. and Statis.*, May, 1955, pp. 131-133; Julius Margolis, "A Comment on the Pure Theory of Public Expenditure," *Rev. of Econ. and Statis.*, Nov., 1955, pp. 347-349; Samuelson, "Diagrammatic Exposition of a Theory of Public Expenditure," *Rev. of Econ. and Statis.*, Nov., 1955, pp. 350-356; Samuelson, "Aspects of Public Expenditure Theories," *Rev. of Econ. and Statis.*, Nov., 1958, pp. 332-338.

[2] Paul A. Samuelson, *op. cit.*, 1954, p. 389.

termination of the level of expenditures. It might be supposed that something is gained from allowing individuals to earmark their centrally determined defense taxes for allocation among, say, long-range bombbardment, air defense, civil defense, and limited war capability since individual tastes can differ with respect to the relative weights attached to these broad objectives. Little, if anything, is accomplished by this. Since each of the objectives itself constitutes a public good, the problems already mentioned will be encountered. And the situation is complicated by complementarity among the objectives, which adds difficulties to an already involved situation.

The trouble with making national defense decisions on the basis of consumer sovereignty is not simply the lack of a suitable mechanism. Interdependence is aggravated by doubts about the state of consumer knowledge. It is hard to make decisions when we are all in the same boat —but it is positively frightening when the boat is commanded by a blindfolded captain who is as likely as not to steer for the rocks. Is this a reasonable characterization of consumer tastes in defense?

The blindfold will always be there to some extent because of the need for military secrecy on some matters. And even without it, vision will be none too good because of deficiencies in the technical training needed to judge among the highly technical means for waging modern war. This, however, is a problem which exists in the civilian economy and is handled there by imputation through the market from consumer tastes to the factors of production. Conceivably, a similar imputation could be performed, though not so automatically, by the military experts in the Department of Defense.

What about the larger issues on higher levels of decision? Can a consumer really know what he is getting when he buys a dollar's worth of limited war? Or of deterrence? The conceptual difficulties in defining these objectives, as well as the problems of achieving them, have been the subject for a good deal of discussion.[3] Moreover, by the time the experts have analyzed these problems and are ready to help consumers to construct a preference scheme, it is likely that changes will have occurred in technology, the aspect of the enemy, or the state of our alliances so that the experts will have to return to their analysis. In fact, the construction of a preference scheme among national objectives is a continuous process of data gathering and analysis, in the course of which decisions must be made. They are made on the basis of very limited knowledge, and they are therefore made with reference to objectives at intermediate levels. This is the situation which has given

[3] For two illuminating examples, see Albert J. Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs*, Jan., 1959, pp. 211-234, and Malcolm W. Hoag, *The Place of Limited War in NATO Strategy* (RAND Corp., P-1566, Dec. 4, 1958).

rise to the concept of suboptimization.[4] We can do no more than suboptimize in military decision making because there is available no suitable final or highest set of preferences in terms of which a global optimum can be defined.

Military Decision Making without Markets

Despite the unsuitability of market mechanisms and the possible irrelevance of consumer tastes for most major decisions on matters of national security, economists have proven themselves useful advisers to makers of military decisions. Part of their usefulness comes from their experience in applying the logic of choice underlying Paretian welfare theory. The optimality conditions offer a valuable computational short cut where their underlying assumptions are satisfied. But those assumptions are never satisfied perfectly, and often diverge from the facts in a serious way. If we are to reach optimality through reliance upon marginal comparisons, we require *inter alia* that the law of diminshing returns be operative. There are many military situations where this assumption is apparently violated. I shall offer two for comparison.[5]

The first example arises in calculating the results of a bomber attack when targets are protected by defense forces whose capabilities can be saturated. A typical model of this situation assumes that the average fraction of bombers surviving a given level of defenses is an increasing function of the number of bombers dispatched. This means that there may be increasing marginal returns, in terms of bombers surviving to target, to additional bombers dispatched.

The second example is provided by a radar network enclosing a defended area and serving to warn it of approaching bombers. Radar is characterized by a probability of detection which declines as the distance between the bomber and the radar increases. Suppose that radars are spaced to give very high detection probabilities, say, .95, over segments of the line which are close to enemy territory; but that gaps with zero detection probability have been left in segments of the line which are most distant from the enemy since he is not expected to approach from this direction. In fact, the effect of such a line may well be only to induce the enemy to choose the longer routes and approach through the gaps. The probability of detecting his raid when it comes will be zero. The productivity of the line in this case is solely the value to us of the additional constraint on the enemy's route choice. This value is likely to be quite small. If he has aircraft of sufficient range to complete

[4] For an early exposition of the concept see Charles J. Hitch, "Suboptimization in Operations Research Problems," *J. of the Opera. Res. Soc. of Amer.*, May, 1953, pp. 87-99.

[5] Malcolm W. Hoag, *Some Complexities in Military Planning* (RAND Corp., P-1531, Oct. 30, 1958). The examples have been slightly modified to make the points which are relevant here.

the mission on the longer routes, the only effect of the radars may be to cause him to expend extra fuel, a negligible matter for a modern air force. However, by making relatively small expenditures to fill gaps, our probability of detecting a raid may be sharply increased, regardless of which routes are chosen by the enemy. This situation can also be characterized by increasing marginal returns to additional expenditures on radar in terms of the probability of detecting a raid.

The radar example and the attrition example are fundamentally different, however. Faced with the saturation phenomenon, we may find that the optimal solution will occur where the marginal returns are still increasing. The radar case is different. So long as there are increasing returns in that situation, the solution is not optimal. If a lower level of detection probability, say, .75, is accepted for the sections of the line close to the enemy, it may be found that the same number of stations more widely spaced will serve to give this probability uniformly along the entire perimeter. In this way the same number of stations can produce a detection probability of .75 instead of zero. It might be still better to add enough radars for a .95 probability all along the line. Redistributing the given radars may not be optimal, but it establishes most easily the inefficiency of the initial condition.

Let me be more precise about the distinction between optimality and efficiency. Problems of choice arise when we are faced with multi-dimensioned alternatives. In the simplest case there may be two dimensions, say, a dollar cost and a military output. If cost and output are incommensurate, as they are in many military problems, we may be unable to choose. If, however, we can compare one output with another and we find that the lower cost alternative also has the higher output, we have demonstrated that one of the points is inefficient relative to the other. We may safely choose the efficient point, in preference to the other. No higher level criterion, which makes cost and output commensurate, can reverse this ordering. Suppose that a third alternative is introduced and that it has both the highest cost and the highest output. We can still reject the inefficient alternative but we cannot choose between the two remaining, without recourse to the higher level criterion. Moreover, if we are constrained not to choose the efficient alternative of the first pair, we are unable to choose between the point which we have been calling inefficient and the third point, except by recourse to the higher level criterion. This last is a situation which has been commented upon in reference to the so-called "theory of the second best."[6]

The discussion points out the following relation between efficiency and optimality with respect to a given set of alternatives. Optimality

[6] R. G. Lipsey and K. Lancaster, "The General Theory of the Second Best," *Rev. of Econ. Studies*, 1956-57, pp. 11-32.

always involves the application of a criterion at least one step higher in the hierarchy of criteria than does efficiency. Thus, in the physical relation of inputs to outputs we speak of points below the production function as being inefficient. Among the efficient set of points defined by the production function, however, we can choose an optimal point for the production of any given output. This optimum is defined in terms of the higher level criterion of minimum cost, given the factor prices.

It is clear that we cannot ignore, in the search for efficient alternatives, the problem of choice among such alternatives. A nonoptimal efficient alternative can be inferior to an inefficient one. It is only in a pair-wise comparison of alternatives that the efficient one is always preferred. However, the main payoffs to research on military resource allocations may be found in the movement from inefficient alternatives to more efficient ones which dominate them. In the radar example, closing the gaps by adding radars involves a comparison between the cost of the radars and the increment in detection probability achieved. To do this involves at the very least the feasible, though nontrivial, task of comparing the utility of raid detection and the best alternative use of the funds in air defense. But it may also involve comparisons with alternatives over a very much wider range, say, over all military expenditures, or over all government expenditures, or perhaps even in the private sector. Such comparisons are difficult and often impossible to make.

Instead, the comparison in the example was made easy, and easy to explain, by using the initial number of radars to achieve a higher effective probability of detection. Nothing is changed but the detection probability, and we are therefore arguing by dominance, or by the use of the efficient point concept.[7]

This kind of argument is useful, but it makes severe demands upon the preferred alternative. An alternative which is just slightly better than some other is not likely to provide us with an argument by dominance. Suppose the original situation is one in which the radars are spaced optimally, but there are just not enough of them to close the line. No argument by dominance can be made. To improve things it is necessary to add radars.

To focus research on the location or invention of markedly superior alternatives implies the belief that inefficiency must be a widespread phenomenon in military resource use. There are grounds for believing that this is the case. The assumption of productive efficiency within the firm is basically dependent on the operation of the forces of competition in a relatively stable world. Under noncompetitive conditions in the

[7] Charles J. Hitch, "Economics and Military Operations Research," *Rev. of Econ. and Statis.*, Aug., 1958, p. 208.

real world, we are not surprised at entrepreneurial behavior which is nonefficient in the narrow, pecuniary sense.

Military decisions, however, are not subject to any market mechanism, competitive or otherwise. They are made administratively in a partially decentralized organizational structure where today's problems often have little to do with yesterday's. Moreover, the incommensurability of inputs and military output, as well as the difficulty of comparing different outputs, makes it difficult to arrive at valid tests of efficiency for the selection of efficient decision-makers. To complete the picture, the military has experienced and is experiencing a technological revolution whose staggering proportions are common knowledge; and military planners must iuclude in their calculations the highly uncertain reactions of an aggressive and imaginative enemy. These are inauspicious circumstances for efficiency.

Is there reason to suppose that an economist can help to reduce inefficiency? It is obviously impossible to give a rigorous and conclusive answer to this kind of question, but I believe that a presumption in favor of the economist's usefulness can be established by considering the structure of military decision making.

Suboptimization is the operations research analogue of partial equilibrium analysis in economics. It is a conceptual framework under either name, for decentralized or partially decentralized decision making. But the phenomenon obviously preceded the analytic concept. Firms maximized profit, individuals maximized satisfaction, and an unseen hand was at work even before economists described and analyzed the process. In other words, there exists a principle of social organization which corresponds to the economist's hierarchy of suboptimization criteria.

This is equally true of partially decentralized decision making in an administrative context, such as the Department of Defense. In fact, the structure of such an organization can be said to be defined, at least with respect to its policy-making functions, by its suboptimization criteria. For example, the commander of a squadron of air defense fighters is assigned control over specified resources, men, aircraft, etc., and told to maximize his capability to shoot down enemy bombers when he is informed of their whereabouts. The commander of a fighter wing, with control over several squadrons, has the job of maximizing the total capability of all the squadrons under him and can, if necessary, make trades among them to do so. Continuing up in the hierarchy, the air defense sector commander is assigned several fighter wings, defense missile battalions, radar units, and so on, and must maximize the capability of detecting, intercepting, and shooting down enemy bombers in his sector, and so it goes on up to the summit.

A perfect organization is no more likely than perfection in any

other line of human activity, and, when we look at the unstable and complicated environment in which the Department of Defense must operate and the political constraints on its decisions, it appears that it is likely to be less perfect than many.

The radar example is a good illustration of the difficulties. It would miss the point to regard the inefficiency in that problem as the result of stupidity. Air defense planning was undertaken after World War II with the objective of reducing the damage an enemy could inflict upon our cities. The enemy envisaged was one who used planes of late World War II vintage and possessed a limited stock pile of fission bombs. But the situation has changed to one where the prevention of wholesale destruction of our cities, in the event that war occurs, has become very much more difficult, if not impossible. The enemy's stock pile of weapons, their explosive power, and his ability to deliver them have increased beyond our gloomiest expectations. As a result, the objective has changed to the indirect protection of our cities through the protection of our ability to retaliate after an attack, which is the basis for deterrence. Obviously, new criteria are required to take into account the changed emphasis in our objectives, the changes in the enemy, and the new interdependence between our retaliatory forces and our defense forces.

The formal replacement of existing criteria, whether because they were never optimal or because they have been outdated by changes in technology or in objectives, is a serious matter for an organization like the Department of Defense. It involves not merely new ways of thinking about and choosing among policies but reassignment of responsibility and authority, replacement of existing channels of communication, as well as the reallocation of resources. There is, therefore, a range of circumstance in which policy improvements are available through the substitution of a better scheme of suboptimization criteria, but in which it would not pay to make a formal change in the decision structure of the Department of Defense. In addition, there is a wider range encompassing both the situations where structural change would not pay and those in which it would but cannot be brought about because of inertia. It is this range of circumstance which is one of the most promising opportunities for the economist studying military problems. His flexibility in the choice of suboptimization criteria more than any other characteristic tends to produce the freshness of viewpoint generally associated with the conception of a good new idea.

Flexibility must be distinguished from a trait which is sometimes mistaken for it. I am not recommending looking always at the big picture. If it is necessary to test every new idea against our loftiest national objectives, we will never get any analysis done. The economist

must suboptimize also, but, if he is to be helpful, he must look up just often and long enough to make sure that high-level objectives have not changed in any fundamental way.

Conclusion

In sum, these are the principal conditions for fruitful research on defense problems. We must be clear about the actual nature of our job. It is not primarily the choice among a fully specified set of alternatives in terms of some completely given objectives function. This task is likely to be either trivial or impossible. The problem of consumer choice as generally viewed is not the appropriate analogy to choice in defense problems. Preferences among instrumentalities are not immediate but must be imputed. The Air Force does not have a preference between a supersonic interceptor aircraft and an intercontinental ballistic missile in the same sense as I have a preference between a red car and a blue one. We can, however, construct a preference ordering, just as the market mechanism imputes value to the means of production from the value of their products. The difference is that the military has no market mechanism to perform the imputation, and the starting point is relatively uncertain. Constructing preference patterns is primarily a knowledge-getting process. The task of aiding in decision, then, is mainly the task of finding out more about the alternatives.

The process of education about alternative ways of achieving objectives does not, of course, leave the student unchanged. New objectives (or changes in the importance we assign to the old ones) and new instrumentalities are suggested. We search for new alternatives to test, and discover new criteria by which to test them. These new alternatives, having been suggested by newly acquired knowledge, are likely to prove superior, and we hope sufficiently superior, to the received alternatives to make a preference ordering possible in the face of the inherent uncertainties.

Finally, we must be appropriately modest in our objectives. In the face of limited knowledge and of uncertainty it is doubtful that there is any point in speaking of the global optimum. But even having abandoned this concept, we must measure our desire for ever better decisions against the limited resources we have available to gather and order the knowledge to improve these decisions. We are faced with, of all things, the problem of allocating our own scarce resources for research among competing uses.

DISCUSSION

STERIE T. BEZA AND KLAUS E. KNORR: Hoffman has addressed himself to an important and difficult problem. His interesting discussion is helpful in clarifying some of the issues involved in the economic analysis of defense and in pointing out the direction which such analysis should take.

There are two questions confronting those who make military decisions that Hoffman considers to be economic questions: how much to spend on military preparedness; and what allocations to make among the many sorts of military capabilities competing for resources. An answer to the first question involves bringing together the community's opportunity function, which lists efficient alternative productive arrangements, and the community's preference function, with military preparedness as one of the choices. The answer to the second question involves the maximization of output (in this case military output) with given inputs. It is, in effect, part of the process of defining the community's opportunity function. The process of suboptimization is the partial equilibrium aspect of the military maximization problem. Mr. Hoffman is primarily concerned with the second question; so our discussion will be directed toward that area.

It is easy to see that workable criteria can be discovered which at the suboptimization level—e.g., the solution of logistic problems—permit specific objectives to be maximized in terms of inputs. But at the higher or highest levels of choice—i.e., when it comes to maximizing military worth or military power from a given volume of resources allocated to the defense sector—the selection of maximizing criteria looks fairly prohibitive. Like profit making, the process of maximizing military power from a given volume of resource inputs involves a vast aggregate of heterogeneous assets. Unlike profit making, in the case of maximizing military power, the assets cannot be summarized in some sort of index or cannot be so summarized with even the low approximation possible in the case of the average firm.

At the present stage certainly, the search for an over-all system of evaluating military components looks rather hopeless. It is in the nature of the payoff expected from military assets that the discovery of transformation functions would be difficult enough even in a world of tested and unchanging (or very slowly changing) weapons systems. But defense decisions are made in a universe of weapons systems which are, first, largely untested and, second, subject to a stupendous rate of obsolescence. The opportunity functions, therefore, are highly uncertain.

While at the lower than global level—the level of suboptimization—efficient choice among alternative resource employments ranks much higher in terms of feasibility, feasibility remains even here restricted by the limited skill and imagination of the analyst in identifying the important variables and bringing them into proper analytical relationships. According to Hoffman, the usefulness of the economist in the optimizing process is that he is trained to think in terms of marginal comparisons. Hoffman notes, however, that the phenomenon of increasing returns militates against the incautious application of the marginal principle. And it is Hoffman's view that there are many military

situations where increasing returns exist; his example of bombers surviving relative to bombers dispatched is one such case. But increasing returns in this example are more apparent than real. As the writer notes, while increasing returns may exist in terms of bomber survival, diminishing returns may be encountered in terms of the value of the targets destroyed. It is pointed out in the paper that as higher and higher level criteria are considered (e.g., the value of the targets destroyed) the probability of increasing returns diminishes. It is our contention that as economists we would almost automatically turn to the so-called "higher level" criteria in this case; i.e., that the questions of bomber survival and value of targets destroyed would be treated as one. This case is entirely analogous to the convoy escort problem of World War II, when it was discovered that increases in the size of the convoys and their destroyer escorts reduced the merchant ship loss while it increased the number of U-boats sunk. Consequently, action was taken to increase the average size of convoys without much thought being given to the ultimate purpose of convoys. The purpose of convoys was obviously not to maximize the number of U-boats sunk nor to minimize the loss of merchant ships but to get materials across the ocean. In the case of the bomber attack, one would hope that an economist would consider the value of the target as well as the number of bombers surviving.

It still remains, however, that there may be many areas in which application of marginal analysis is useless in indicating the optimal solution. This does not mean, however, that the problem is one that is beyond the scope of the economist. For such problems, rather than thinking in terms of marginal equalities, we might have to resort to an analysis that explicitly considers inequalities.

Suboptimization is no doubt extremely useful because it will frequently, if not usually, define certain necessary, though not sufficient, conditions of the optimum use of resources which escape our grasp. In some cases, however, the incremental movement toward an optimal solution at a low level of optimization may lead to a movement away from the optimal solution at the global level. In other words, the simple application of marginal analysis may lead us to "neighborhood" optimal arrangements but away from a global optimal solution. The author recognizes this difficulty and in the radar example he argues that "the main payoffs to research on military resource allocations may be found in the movement from inefficient alternatives to others which dominate them." In his example there is no increase in resource cost involved; it is a matter of rearranging radars so as to achieve a higher effective probability of detection. To cast this in terms of the analysis of the firm, Hoffman is proposing that rather than having some man (the suboptimizer) walk over the profit surface (in a dense fog) in search of a peak, that man might better spend his time reducing costs (increasing efficiency) so as to increase profits irrespective of the level of output. Clearly this is a sensible diversion of effort if inefficiency is widespread. And Hoffman believes that this is the case in military resource use. That military decisions are not subject to any market test and that the military has been experiencing a vast technological revolution are advanced as reasons for believing inefficiency in the military establishment

is extensive. We do not presume to know the extent or reasons for military inefficiency or the relative levels of business and military efficiency. Business firms do, after all, encounter many situations where uncertainty is great and technological change is rapid; so the difference between these two groups with respect to efficiency may not be so great as is suggested in the paper.

While efficiency considerations are undoubtedly important, it still remains that some attention needs to be paid to the problems of optimization. And while the process of suboptimization has dangers associated with it, it will undoubtedly continue to be used. The dangers are that in the absence of a workable global theory of military value, even the best performance in terms of incremental improvements on the lower levels of choice may still result in an inferior and inefficient military posture.

One can, of course, take the optimistic view and hope, with some degree of justification, that the construction of many specific models for a great number of suboptimization problems will help to push the level of feasible suboptimization higher and higher toward the levels of the important decisions; i.e., the choice of major weapons systems, the choice of their combination, etc.

The paper points out that the usefulness of suboptimization is further limited by institutional contraints resulting from Congressional budget preferences and from personal and group preferences of decision-makers in the Department of Defense and the Armed Services. These constraints in the system force solutions to be sought at lower levels of suboptimization than would be feasible on rational grounds.

In light of this, we wonder whether it would not be worth while to attempt a theory of the institutional constraints in the military decision-making system (including the relevant activities of the White House and the Congress). Some relevant questions would be: What does the population of the defense sector and its various subgroups seek to maximize, why and how? The variables which are relevant to the individuals' interests in different roles are sure to be several, and increasing the nation's defense worth is only one of them.

For one thing, such a theory might eventually help in educating the personnel, reducing the constraints, and designing a superior management system for defense. It might be possible to design a system in a way that constraints are minimized by an appropriate system of administrative rewards and penalties at various levels of decision making. For another, such a theory might help in predicting as well as explaining constraints and in estimating the institutional costs of moving from a lower to a higher efficiency point. Inclusion of such costs may sometimes be important in solving suboptimization problems realistically. All this boils down to saying that theories of actual decision making would be useful, as well as pure theories of rational decision making.

JACK HIRSHLEIFER: Mr. Brownlee's interesting paper is devoted primarily to showing how certain desirable properties of market allocation results can be achieved for government expenditure decisions. There is one field, however, which Brownlee as defender of the market principle surrenders too

easily. I refer to the so-called "public" or "collective consumption" goods—those commodities or services whose consumption by any individual does not reduce the amount available for any other. It is clear from the very names assigned to such goods that their provision has often been regarded as necessarily outside the market, which Brownlee seems to concede. This conclusion is not wholly warranted.

It is useful to distinguish between two classes of the so-called "public" goods: those for which the act of individual consumption is voluntary and those for which it is not. Any good the consumption of which is voluntary or escapable can in principle be made appropriable to individuals. National defense is an example of a nonappropriable good: all consumers receive the service whatever their own desires may be, and so only a collective purchase is possible. Upstream flood protection is another example: once the waters are held back, even those who like floods cannot get them. It is for such commodities that we can scarcely conceive of market mechanisms working. But other public goods, the consumption of which is individually voluntary, are or can be made appropriable by technological devices (e.g., the pay-TV proposals) or by legal enforcement. That is, a collection device can be interposed between production and consumption of the commodity, a price being charged for the voluntary individual act of consumption. In such a case, production of the commodity will yield revenue to private producers, and market forces will attempt to provide the good.

Patentable knowledge is an interesting example which satisfies the definition of a public good and which the law makes appropriable. It is true, of course, that the market cannot satisfy all optimality properties for such goods, unless perfect discrimination is possible in their sale to individuals. Thus, if any nonzero price is charged for marginal units of consumption, some consumers will be deprived whose valuation of the service exceeds the zero social cost of supplying them. Note that this departure from ideal diffusion of an existing quantum of the good in question is not inconsistent with a reasonably close achievement of the optimal over-all quantity to produce. In the case of patents, while undoubtedly we fail of optimality by charging for the use of patented knowledge, the revenue thus generated encourages substantial market production of new patentable knowledge. As no one has demonstrated any optimality properties for the government production alternative, the market can hardly be dismissed for failing to reach the theoretical optimum.

While Brownlee's exclusion of public goods from his discussion of possible use of market mechanisms is too severe a restriction, it is valuable to emphasize that government is currently in the business of providing a wide variety of goods and services in which no essential element of collective consumption enters: the mails, electricity, water, and recreational facilities are among the many examples. Brownlee concentrates particularly on the provision of education and of highway services. In each of these cases he points to certain bad results of the absence of the cost-benefit connection automatically provided by market decisions. His suggested remedies can usefully, I think, be considered under two headings: market creation or improvement and market simulation. Market creation is simply the establishment of a market mecha-

nism where none now exists for a certain commodity—conversion of a road from free to toll status would be an example. Improvement of an existing but partial market mechanism (that is, one with a great deal of non-price rationing) is a closely related idea. A very direct way of using the market is, of course, to privatize (denationalize) a government activity. In the nineteenth century, the federal government avoided the necessity of making a host of complex decisions about efficient utilization of public lands by its simple provisions for conversion of lands to private property by homesteading. Market simulation is essentially the application to government activities of those Lange-Lerner rules which would follow automatically from perfectly functioning competitive markets.

With regard to education, Brownlee points out that the argument for government subsidy here and in general is separate from the argument for state provision of services. This has been recently emphasized by Friedman, who would have the state subsidize the consumption of education but would require public and private schools to compete on equal terms for custom.

Brownlee distinguishes sharply between "elementary education," for which the external or spillover benefits to the community are supposed to justify public subsidy, and "higher education," for which he accepts no such claim. That Brownlee does not want to maintain this view absolutely is indicated by his placing the terms "elementary education" and "higher education" in quotation marks, but presumably he believes that there is something in the distinction. I cannot see that there is. It is true that the major beneficiary of higher education is ordinarily the individual himself, but it would be difficult to prove that this is not the case for elementary education. And, of course, the community reaps a handsome return from the higher educational effort expended on those individuals who in conspicuous or quiet ways advance the total of human knowledge or well-being.

One need not accept this view as to the relative absence of external effects of higher education to endorse the idea that the primary beneficiaries should pay more than they do now; that is, that price should be closer to marginal cost. Improvement of the capital market for investments in education would eliminate the distributional objection to higher charges. Along this line, it should perhaps be mentioned that where the numbers educated are held down by deliberate policy of professional associations, the subsidy does not create a larger supply of educated practitioners but becomes an additional rent for a class of relatively wealthy individuals.

Turning now to highway services, Brownlee declares or implies that while the whole highway system "pays for itself," and should, it is not true that every part considered separately "pays for itself," although each part should. Apparently what is involved in this statment is a comparison of over-all costs with receipts from tolls, fuel taxes, and license fees; but receipts from these sources are perhaps a poor indication of whether the benefits are sufficient to make the system socially pay for itself. In fact, if these receipts just cover costs of operation plus capital charges, the relevant social benefit of the system must be substantially larger than the cost. And appropriate marginal-cost charges may of course fail to recover total cost.

I would like to explicitly endorse Brownlee's statement that the interest or discount rate to be used in government efficiency calculations is not the government borrowing rate but the marginal return on funds invested elsewhere in the economy. I also believe that it can be shown that, adjusting for the effect of corporate taxes, even for the most conservative government investments (those comparable with investments of privately-owned utilities) the discount rate to use should not be below 9 per cent or 10 per cent. In practice, use of such rates (instead of the rates in the range of 2 per cent to 4 per cent now employed) would drastically affect the scale and mix of projects adopted. I would also like to record agreement on the possible advantages of variation of tolls to meet different circumstances and, in particular, to handle peak loads. Appropriate peak-load pricing is probably of crucial importance for all transportation media (note, for example, Vickrey's study of the New York subways) and represents a prime example of the practical applicability of concepts of economic theory.

ROBERT DORFMAN: Professor Brownlee comes before us as an honest advocate. It is my privilege to appear as a frank skeptic.

Professor Brownlee's main plea is for more extensive use of marginal-cost pricing of government services in order to reap two advantages of the market test for ascertaining the desirable extent of those services. In effect he advocates substituting market choice for political choice with respect to many government services whose consumption is, primarily, a private rather than a public concern. He has a subsidiary plea also: that the actual provision of governmental services be delegated to private firms (either by government contract or individual arrangement) whenever this delegation promises more economical performance.

I shall discuss the second recommendation first. The criterion of economic efficiency is of course relevant to the decision as to whether a ship is to be built in a navy yard or by a private shipbuilder, whether trash is to be collected by the sanitation department or a private contractor, whether water is to be supplied by a water department or a water company, etc. There is a difficulty, though. In spite of vast experience with public and private provision of these and other services, the cost accountants have never been able to tell us very decisively whether government or private operation is cheaper. The accounting difficulties are formidable and, besides, a bureaucracy is a bureaucracy whether it is called a department or a corporation, and it is not surprising that any differences in operation are hard to detect. Thus this criterion is hard to apply and may go either way.

But there are other criteria, too, relating to the choice between governmental and private performance and, though they are not economic, they should be mentioned. One is a bare-faced preference as between governmental and private performance. Some people would rather work for a private firm than for a government agency and some vice versa. Some consumers feel that a government agency is more likely than a firm to be responsive to their wants and desires and some vice versa. Some find big government repugnant; others object to private exploitation of public resources. The desirable method

of making use of the knowledge bought with 10 billion dollars of government expenditure in developing atomic energy involves all these issues. Mostly they are noneconomic value judgments, but nonetheless relevant.

Now, as to the major recommendation. Brownlee recommends that when a government service is individually consumed and when the consumption of that service is not a matter of public concern (when it is free of external economies and diseconomies of consumption, in his phraseology), then the beneficiary should pay at marginal cost for the service he consumes. As Brownlee points out, the soundness of this recommendation rests on the degree to which the assumptions of conventional welfare economics are fulfilled in a live economy. Superficially these assumptions are not very well fulfilled, but whether the obvious divergences have significant consequences is a difficult and controversial matter that cannot be thrashed out here. May I only call to mind, in passing, Galbraith's recent emphasis on the damage done to these assumptions by the interdependence of preferences and their malleability under the hammer of advertising.

Let me base my skepticism on two somewhat different grounds. First is recognition that consumer sovereignty and producer sovereignty are not absolute goods in our scheme of values. On the one hand we regulate consumption of narcotics, gambling, and education. On the other hand we regulate production of foods and drugs, housing, and lots more, and control many aspects of employment contracts. In short, we often politically invalidate market criteria. Hence the decision to reinstitute them, as Brownlee desires, is also a matter of political values.

My second ground is, perhaps, the first all over in different guise. Brownlee's recommendation taken literally is surely sound but is essentially tautological. He recommends that the government not interfere with consumption where it has no business interfering or, as he says, where there are no substantial external economies of consumption. The trouble is that the presence of external economies is a matter of social judgment and fundamentally a matter for political decision. Take the example of higher education. Brownlee feels that it is essentially free of external economies. A great many other people, including, as I read him, Milton Friedman, feel that it has external economies because it concerns the supply of people trained for social leadership in the community. More notoriously, this past year, it concerns the supply of people trained in the technologies needed for national defense. Or take his highway example. Some of the external economies I detect in a well-developed highway system are: increased communication and cohesion among the regions of the community; decreased congestion in communities where old-fashioned through roads go through the center of town; decreased toll of traffic accidents; increased effectiveness of emergency vehicles like ambulances and fire trucks; national defense aspects like increased mobility of troops, facilitated egress from threatened urban centers, and reduced cost of industrial dispersal. Now, who is to judge whether external economies of consumption are substantial in these two instances or in the instance of any government service? Perhaps the fact that it is a government service is a pronounced judgment that economic considerations cannot gainsay.

POWER BLOCS AND THE OPERATION OF ECONOMIC FORCES

ECONOMICS BY ADMONITION

By Ben W. Lewis
Oberlin College

Recent years have witnessed the display of some questionable manners toward persons in high places. These persons, even (particularly) the person in the very highest place, have been admonishing leaders of industry and leaders of labor to look upon the precarious state of our sound economy, imperiled by burgeoning inflation and yawning recession, to commune with their consciences in the vast stillness imposed by the solemn responsibility which is theirs, and voluntarily to restrain, even to reverse, their age-old propensities and proclivities in the matter of prices and wages. The admonitions have been reinforced by fearsome warnings: the cost of failure to heed will be the loss of our way of life.

The response has been not only less than spectacular; it has been less than perceptible. It is not that people do not listen or that they disagree with the admonitions delivered to others. Indeed, when our leaders of industry and labor see these admonitions being ignored by other leaders of labor and industry, they are noticeably distressed. But, nothing happens. As for the rest of us, we applaud the recitation of the noble lines and hiss the villains whose selfish conduct flouts their direction; but when in due course we are admonished, in the name of our way of life, to stem the flood of inflation by spending less than we want to spend, we wave our checkbooks; and when we are admonished to break the bonds of recession by spending more than we are then inclined to spend, we sit on our hands. All of this is very disrespectful to those in high places and may very well lead to dire consequences. Some of us are reminded of another time, a quarter century ago, when we failed to follow the admonitions of another highly placed person upon the occasion of another threat to our way of life. We were told in 1929-30 that if we would all act as though we were employed and prosperous and confident of the future, we could rub our eyes and the depression would be gone. And if we didn't . . . ! ! ! Well, we didn't; and what happened to our way of life generated about two-thirds of the content of our present-day economics textbooks!

Admonitions are not new to us, although in our economic milieu they

are always a little startling. Business statesmen have been admonishing other business leaders for the past twenty years to rise to the challenge of business statesmanship. They have raised their eyes above and beyond the marketplace to the distant stars and have asked the stars, "What is our responsibility to society?" In the interval of waiting for the answer, they have enjoined their fellows, in the name of our way of life, also to gaze wistfully skyward, to search out their consciences, and to embrace "social responsibility" as the standard and guide of business conduct. Let the record show that the stars are still blinking.

There is, of course, some point to this concern about our way of life. It seems evident that our way of life is right now undergoing substantial change—a change reflected in the very fact of the admonitions themselves. Our way of life is geared to gain, not to goodness. If it were operating on schedule, admonitions marinated in goodness would be as pointless as, in any event, they are bound to be ineffective.

I

The way of life which our more persistent admonishers are admonishing us to preserve is our economic way of life—our way of economizing, our economic system. May I suggest that creeping admonitionism is wholly foreign to our economic way of life, and that economizing by conscience is a symptom of, and not a cure for, organic disabilities which are beginning to be plainly discernible in our economic body.

Please indulge me for a moment while I remind myself that an economic system, a political economy, is a set of man-made and man-accepted arrangements designed to economize our natural and human resources; that is, to bring about the constant and continuing use of these resources as men, in society, want them to be used. Since, even on this most affluent of all planets, not all of the desires, however induced, of everyone can possibly be satisfied, conflicts of economic interest are bound to arise and must be resolved. Choices and decisions acceptable to society must be made and carried into effect continuously and in volume. We are forced by the basic conditions of our life together to economize our resources and, thus, to establish and everlastingly to re-establish arrangements suited to the performance of the economizing task as we want it performed.

Economizing by its very nature involves the disposition of conflicting claims, all of which may be reasonable and "good." All economic decisions are related and interdependent, and if our decisions are well taken, we purchase our satisfactions at the cost of other satisfactions foregone. Economic decisions carry denials with every approval, refusals with every grant. This, of course, is why we care, why we econo-

mize. This is why society as a whole—all of society—is concerned with economizing decisions. This is why economizing is society's business.

There is another reason why the business of economizing is society's business. Any economic system—"market," "Marxist" or "mixed"—involves control by society over the behavior of individuals. An economy points the way and sees to it that the way is followed. Its weapons and sanctions may be direct or indirect, sharp or blunt, but their function is clear: to make individuals behave as society wants them to behave and as they would be quite unlikely to behave in the absence of society's economic controls. It is the function of controls to control, to be unpleasant and even to hurt; and so to affect the actions of individuals. This is true both of the directives and legal penalties of authoritarian systems and the price-cost directives and coercion by competition that characterize free enterprise economies. But whatever the arrangements and forces, they represent the application of socially sanctioned power to the behavior of individuals: they can properly express no will or purpose other than the will and purpose of society.

Economizing, then, is society's affair. The problem is society's problem, and society must set the standards and provide the answers either by naming the standards and spelling out the answers directly through its political machinery or indirectly by establishing or acquiescing in a set of processes to produce answers which are acceptable because the processes from which they derive are accepted. It is neither the privilege nor the responsibility of any individual, however conscientious or statesmanlike, voluntarily to render economizing decisions in the name of society.

The economic system in operation in any country at any time represents the way in which the people of that country, at that time and as they are then persuaded, want the economizing function in their society to be performed. In our own case, we place heavy reliance upon the forces of (1) free, individual initiative and choice, (2) economic (profit) motivation, and (3) unrestrained rivalry (competition) between independent, profit-seeking sellers and between independent, profit-seeking or satisfaction-seeking buyers. Through these forces we hope to achieve optimum use of our resources in the directions we desire, and the division and use of the products of our resources as we want them divided and used. The rationale of the process is simply that although everyone is seeking maximum gain free from conscious control by the group, each is, nevertheless, forced by the competition of others similarly motivated to offer to the market the best of which he is capable (as the market measures best), not alone to make the greatest gain, but in order economically to survive. Under this philoso-

phy, we abhor any substantial lessening of competition as opening the door to the violation of society's pattern of resource use and enjoyment, and as derogating from society in favor of individuals the performance of the economizing function which society alone is competent to perform.

Competitive profit-seeking in the free market is the core of our economizing process, but we have never been satisfied and happy with the core alone. All economic systems are made from day to day; they undergo constant modification and revision to accomplish the economic purposes which men, in their own time and their own environment, deem to be good. The machinery for establishing and changing the formal structure of the economy is political, and it is invoked whenever enough people are moved to call it into operation on specific issues. Whenever enough of us become dissatisfied with the structure or processes of the economy as it exists or displeased with the results which it produces, we exercise our collective political will: we "economize" consciously by government. Sometimes we seek through government to make the market itself operate more effectively as an economizing instrument; sometimes we move positively into the market with our sleeves rolled up and force the economic verdicts which, collectively, we want but which the market by itself is not prepared to deliver. Through government we supplement the market; we also supplant the market. Our total, over-all economy, thus, is a complex and constantly changing mixture of profit-seeking, competitively-controlled individualism, and conscious, governmentally organized and operated collectivism, built up piece by piece, to serve the desires of our politically free people as they express their desires in political economic decisions. It exemplifies, if exemplification is needed, the proposition that economizing is society's business.

In the context and within the rationale of our way of economic life, it is the social role of the individual to seek the maximum personal gain which the system will permit him to take. The laborer serves the goals of the economy when he seeks high wages, as do individual farmers and businessmen when they seek to maximize their profits. Let us be quite clear on this: profit-seeking is not only acceptable to our way of life, it is indispensable. The forms and methods which profit-seeking may appropriately adopt are conditioned, of course, by circumstances and by the mores of the time, as well as by laws, but the logic of our economy will not permit the drive of profit motivation to be blunted or its direction to be diffused by the social conscience of individuals. Never, except in confusion, do we call upon individually-felt social responsibility as a central economizing force.

II

Does it, then, indicate confusion to admonish business and labor leaders and the rest of us to ignore market warnings and considerations of self-interest, and to take off on courses which for each of us as individuals can lead only to economic disaster, in the hope that, if each moves toward disaster, all will be saved? Does it suggest confusion to admonish us as individuals voluntarily to forego economic satisfactions in order that all may be more fully satisfied? It certainly does. And it indicates confusion confounded—indeed it is the cream of the jest—to assume that anyone is listening. The jest is really creamed by the circumstance that the admonitions are offered in the name of our way of life.

It is difficult to conceive that markets made up of completely altruistic buyers and sellers, moved by admonitions to grasp solely at the fleeting forms of economic goodness as they may manifest themselves to each individual through a misty emanation of social responsibility, could possibly do an economizing job for society, even if such people could be trained or bred. Yet admonitions continue to ring out, and the very authority of their source compels us to consider the nature of the confusion they seem so patently to mirror. Preference by the White House for admonitions rather than action by the government may stem from genuine doubt as to the capacity of the government to perform effectively in the premises, or from the realization that execution of society's formal economic controls is bound, at best, to be a distressingly unpleasant business (only a sadist with a life-time appointment could really be happier with a hatchet than a trumpet!). Again, admonitions may be preferred because of a basic social-philosophic aversion to compulsion where persuasion offers even a remote chance to gain passable results. With less charity, we may also note that admonitions may be employed to divert unwanted attention from unwanted problems, or even simply to delay, if not to forestall, the making of difficult decisions. The preference of business leaders for admonitions may reflect Messianic complexes or simply an entirely understandable aversion to letting government in on the act in any role that involves restraint on managerial discretion.

Whatever the explanation, the persistent flow of admonitions strongly suggests a very disturbed state of mind on the part of those in high government and business places—their growing suspicion that things in the economy are getting out of hand and that something needs to be done about it that the free market, unassisted, cannot be expected to accomplish. The fact that weakened faith in the processes of the free market may be explicitly denied, if, indeed, it is even rec-

ognized, is itself an indication of the prevailing confusion. This confusion, however, is not without its encouraging aspects: it is top-drawer, not mine-run, confusion; it stems from insight, dimly seen.

Calls to business statesmanship, which have much in common with, but which are of a different order from, admonitions delivered to the rest of us as consumers, reflect this confusion and tremulous insight most sharply. It is quite possible that our admonishers are catching a glimpse of a phenomenon which many observers of the American economy have been commenting on for many years, but increasingly of late: the decision-making, economizing processes in the free enterprise sector of our economy do not consist alone of millions upon *millions of individual choices meshed into social-economic decisions* by the impersonal processes of the market. In significant proportions, society's economizing decisions are made, out of hand, by relatively few people who sit above the market in key positions within huge conglomerates of economic power. I suggest that the admonishers are beginning to sense the fact and the significance of the possession by a few of great power over the economy, and are advising and pleading that this power be used responsibly in the broad social interest. This admonition reflects and imparts confusion, but to the extent that it may serve to galvanize our limp attention to a condition which can use all of the active consideration we are able to spare, its net effect may be good. Wrong iron, wrong fairway, but a good shot!

Bigness in the economy is upon us; big business and big labor stare us in the face. Suppose we shade our eyes and stare back—in this paper at big business.

III

It is high time to take stock of the effect of big units upon the ability of the market to perform its economizing function. "Bigness" is not an exact concept, but, fortunately, the purposes of our present inquiry do not require us to define it with laboratory precision. We can busy ourselves usefully with the clearly recognizable dimensions of bigness; we need not fret over the exact reach or tensile strength of its outermost tentacles. Let's settle for what Berle, in his *Twentieth Century Capitalist Revolution,* refers to as "concentrates"; and let us, for just a few precious moments, turn off the IBM machines and revel in an abstention from ponderous debate over statistical measures of concentration. Our attention will be sufficiently focused if we hold it to a consideration of business units which all of us clearly recognize as big enough to enjoy the power of investment, output, wage, and selling policies that have identifiable, substantial effects upon the markets in

which they deal, and hence upon all whose lives are conditioned by those markets.

This definition of bigness may foretell, but it has not forced, my own conclusions on the policy issue which bigness requires us to face—whether the presence in our markets of giant concentrates leaves enough natural, self-generating, unchecked and uncheckable drive in market competition to enable it to discharge to our satisfaction the compelling, coercive, directive, regulatory, economizing task which the logic of free enterprise requires it to carry. I hasten to note that the issue does not relate to the "guilt" or "innocence" of bigness—its "goodness" or "badness" in the conventional moral sense. The issue is one of economic architecture. Competition plays an indispensable role in a free market economy; to the extent that the pressures of competition are lessened and diffused by concentrates, economic decisions are left to a handful of persons who are not responsible by ballot, contract or market to those whose lives are substantially conditioned by the decisions. Hence, the issue: As we look ahead in the building of our economy, may we reasonably, and are we likely, to continue our heavy reliance upon competition in the ordering of our economic affairs as we want them ordered?

This issue will not allow us the luxury of a single indisputable conclusion, scientifically established and secured by irrefutable evidence. For nearly three score years and ten under the Sherman Act we have picked, piled, poked, and pondered the evidence bearing on bigness and competition in our economy, but only rarely have our pronouncements been inexorably dictated by these processes. When definitive declarations are called for, we wrap our arms tightly around our value judgments—and jump! As I jump, I am peculiarly conscious of the swelling chorus of appeals to "responsible business statesmanship," and I am reminded again that businessmen are free to practice the prerogatives of business statesmanship only to the extent that they are free from the compulsions of competition. It is my unabashed personal value judgment that in a growing number of key spots in our economy big units possess, and will continue to possess, a degree of power over the market incompatible with our confident acceptance of competition as our economizing force.

Big firms differ in the degree of their insulation from competition, but it seems probable that the differences in some cases are more apparent than real, and that in others more power and pomp will accrue with circumstance. No firm is absolutely impregnable, of course, and occasionally one slips and loses its position on the *Fortune* scoreboard. Many forces are at work in this area, and it is far from clear that func-

tional competition is the most common or the most powerful of the lot; certainly its dependability as an economizing force is not established by these shifts. Nor is the presence or strength of competition convincingly shown by the fact that giant firms may upon occasion adopt and follow a competitive "routine"—may make competitive motions, may choose deliberately to "stop short of" monopoly, or as a matter of management policy may institute "competition" among their company branches or divisions. The test is whether the big firm is compelled to compete, whether it is driven by competition in its quest for maximum gain or survival.

The claim advanced when prices are rigid that "in this industry price competition has been supplanted by quality or service competition" is less than convincing. Typically, all dimensions of the bargain are important, and in an effectively competitive market no participant can be free from apprehension that price competition will explode and persist. An atmosphere of certainty as to the forms which competition will take suggests that competition itself is under wraps. This observation bears, too, on the claim that the absence of price competition is not important as long as men and firms continue competitively to innovate. Innovation obviously occurs, but in what measure it is to be attributed to competition is not clear. Neither is it clear that power to act independently of competition in price is not also power to control the degree and direction of innovation. Competition on leash to conventions that happen to be agreeable to the "competitors" is simply not competition.

Nor is competition demonstrated to be present—indeed, quite the contrary is true—by instances in which giant firms hold prices in check in the face of rising markets. Such exhibitions may stroke our consumer sensibilities, but they still exude the aroma of power even though it may be power soothingly applied.

But is bigness more threatening now than in the past? Is there any evidence that bigness is on the increase? Scientific measures of the extent of industrial concentration are not conclusive, but it is certainly apparent that the quality, and hence the significance of the economic power now concentrated in giant firms, is markedly different from that of yesterday, and that today's bigness is far more impressive. A half-century ago, bigness was a brash newcomer fighting its way doggedly into the economy, clawing, biting, slugging, stomping to gain power over the market. Its predatory practices were limited only by its unrestrained ambition and its fertile imagination; and it was on these practices that the public fastened its critical attention. Our concern then (much as now, unfortunately, although then with more reason) was business morality. The rules were being made to relate less to the position and

role of bigness in the economy than to the conduct by which bigness was being built. Lured by the vistas promised by scale, we were eager to embrace bigness whose practices did not offend our standards of business morality; and we were prepared by easy transference to open our arms to bigness which, although its past might have been questionable, had seen the white light of faith and had purged itself of youthful transgressions by confession and pledges. But our arms were not yet opened wide, and our attitude was still one of fascination rather than acceptance. Bigness was on its way, but it still had its way to make.

Bigness today has made its way. It has arrived, and, generously, it has accepted and is doing the very best it can with the rest of the economy. It is bigger; in absolute terms, bigness today is really big. Its roots are deep into, indeed they have become a part of, the foundation rock of the economy, and they are reaching into areas thought at one time to be unfriendly to their growth. The behavior of bigness today is spotless—at least no spots remain unremoved for long; and its appearance and demeanor are attractive and ingratiating. Tutored by its attorneys, bathed, barbered, and cosmeticized by Madison Avenue, nourished and sanctified by war and cold war, and enthroned by public opinion which sees only "goodness" in bigness that is well mannered and well behaved, bigness exhibits the supreme confidence and gracious assurance that bespeak stature, status, and a clear conscience. Bigness *was once the bad boy in Sunday school; now it sits on the vestry.* It may not yet have acquired a full-sized soul, but the contract has been let and the press has been alerted. Bigness spreads its protective arms benevolently over thousands of small, less-favored firms, and dispenses justice among them as it is given to see justice. It keeps them alive (in the aggregate) and in the main tolerably happy—and in line. Bigness is here and—what distinguishes its present from its earlier position—we all know that bigness is here to stay. I suggest that competition today is captive to bigness—that today's competition is more controlled than controlling, its temper lessened, its tautness gone slack.

IV

What of the future? Where do we go from here?

What are the possibilities of antitrust as an instrument for tailoring bigness to a pattern which will renew and sustain our faith in the economizing processes of competition? I would be the last to assert that competition over the years has not been made more pervasive and effective by the energies that have been devoted to antitrust. Certainly I do not decry the current efforts by scholars, lawyers, and officials to sharpen and to add iron both to our thinking and our operating policies. But even when I follow the skillful analysis presented in Corwin Edwards'

extremely able defense of the antitrust approach *(Big Business and the Policy of Competition)* my footsteps falter as I near the jumping-off place. He is concerned, as I am, with power. He believes that "where we can identify power that impairs competition, we should strike it down," and he argues cogently for a case-by-case approach through the courts, the test in each case to be not "the quality of business performance, but the existence of adequate competition." This leaves us (as it should) with market structure as virtually our only test, but we have found no way to test the test or to appraise the cost, in other values foregone, of employing it. We have searched long and our search continues, but neither our logic nor our experience gives us grounds for great expectations.

It is increasingly evident, as we inch tediously and at great expense from one elaborate, "definitive" antitrust case to the next, that the headway we are making is pitiful. Sometimes antitrust holds the line, sometimes it even gains a yard, but most of the time it plays in the shadow of its own goal posts. Each case is necessarily freighted with rarefied shadings and emphases which, while entirely relevant to the rights and claims under litigation, tend cumulatively to blur and dilute rather than to firm our public policy toward bigness. We are required by the very nature of antitrust to strive for microscopic distinctions, to split hairs, and then to split the splits. Each decision raises a sprawling litter of new issues bawling for more decisions; it is a rare case that does not generate as much in confusion as it produces in clarity. In the meantime, bigness grows apace. We cannot see the mass for the increments; we nibble at the trees while the forest spreads and flourishes. A good part of our trouble is this very forest; it has its attractive aspects; it is, in fact, rather inviting.

A word about "workable competition." I apologize for delaying until now my assurance to you that I do not seek after the false idol of "perfect competition." I ask you to believe that, in common with all faithful workers in the vineyards, I take the oath of disavowal each morning upon rising and, facing Morningside Heights, do obeisance only to workable competition. Of late, however, even workable competition is beginning to pall. We embrace workable competition as our standard for antitrust analysis and policy, but it grows increasingly evident that the operating features and properties of workable defy identification except in terms that beg the question, and that the boundaries of competition are being broadened to include everything that businessmen do in the market together with most of the forces from which their doings derive. I suspect that, put to the test of serving as a guide to antitrust policy, workable competition rarely proves to be more definitive than "the total indeterminate combination of practices,

motivations and forces operating in the market, with which, nursing our confusions, we are currently willing to live." The fact is that the concept "workable competition" is not particularly workable.

Perhaps this is the best we can do, and—who knows?—it may work! I really doubt, however, whether playing cops and robbers with bigness will, in the long run, provide us with much more than stimulating intellectual exercise, profits for professional participants, emotional release, and a kind of rearguard protection as we move slowly toward the next water hole. Antitrust will continue in its piecemeal way to prevent gross overreaching by industrial giants, but it cannot be geared to cope with the basic problems raised by bigness as a permanent feature of our economy. And bigness will be permanent. Because of antitrust, it will push its way more discreetly, but between cases it will keep on pushing. We will not cut it down by legislation setting arbitrary limits on size; and such tests and procedures as we may devise to accomplish selective surgery will bring us closer to a state of economizing by government than by competition.

Recently, another protective force has been identified (or reidentified) and placed on display for our consideration as a substitute for, or supplement to, competition. Kenneth Galbraith has alerted us to "countervailing power," the active restraint on the power of strong sellers or strong buyers provided by the presence in the market of strong buyers of strong sellers—or something else. It is comforting to be reminded that most markets have two sides, either of which may be quite irritating and even frustrating to the other (unless, as has been known to happen, the two sides join hands and gang up on the rest of us); and particularly comforting to be assured that if countervailance does not come from the other side of the market it will probably appear from some other quarter—unless something else happens. Countervailing power is a good thing to have hanging over the fireplace; it makes less ominous the threat of monopolistic misconduct. But it is far too fortuitous in its appearance, too limited and spotty in its scope, too uneven in its drive, and too discriminatory in its impact to be relied upon as our principal defense against extortion and, certainly, as the economizing force in our economy.

So we return again to admonitions to business statesmanship and social responsibility, this time elevated to a way of life. The thesis is that where competition alone is insufficient to maintain the conduct of giant concentrates at par, the deficiency will certainly be supplied (if, indeed, it is not already supplied) by a newly developed and still developing additive—the "corporate conscience." We have already characterized this force as foreign to the logic of free enterprise and have suggested that to invoke it formally is tacitly to concede that

competition is on the wane. The movement to give formal *de jure* recognition to social responsibility has now attained enough volume and stature, however, to require us to consider it on its substantive merits.

Adolf Berle has presented the case most explicitly: Along with the growth of the big corporation as the repository of great economic power will come the growth of the corporate conscience. The great modern corporation must be recognized as a political institution upon which, as upon other great political institutions in the past, the flow of events is forcing a degree of public responsibility commensurate with its massive power: "the corporation, almost against its will, has been compelled to assume in appreciable part the role of conscience-carrier of twentieth-century American society."

A succinct comment would be: It is not going to happen; if it did happen it would not work; and if it did work it would still be intolerable to free men. I am willing to dream, perhaps selfishly, of a society of selfless men. Certainly, if those who direct our corporate concentrates are to be free from regulation either by competition or government, I can only hope that they will be conscientious, responsible, and kindly men; and I am prepared to be grateful if this proves to be the case. But I shall still be uneasy and a little ashamed, with others who are ashamed, to be living my economic life within the limits set by the gracious bounty of the precious few. If we are to have rulers, let them be men of good will; but above all, let us join in choosing our rulers—and in ruling them.

Basically, however, the difficulty with the corporate conscience thesis is that, preoccupied with the problem of economic morality, it overlooks the problem of economizing. It is not enough that economic decisions made by corporate managements shall be good in the sense of being selfless rather than selfish, in the sense that managements derive happiness and serenity of conscience from smiles of gratitude bestowed upon them by persons other than their stockholders. To economize is to choose between competing goods. Economic choices can rarely bring smiles without concomitant tears; and lonely consciences hold no formulas for the optimum distribution of smiles and tears in our economy. Once again, with gestures: Economizing is society's job! Economic decisions must be right as society measures right rather than good as benevolent individuals construe goodness. An economy is a mechanism designed to pick up and discharge the wishes of society in the management of its resources; it is not an instrument for the rendering of gracious music by kindly disposed improvisers.

The weakness of corporate conscience as the central force in the economy is that it has nothing to do with economizing. Its presence may assure us that the men who make the decisions will be well inten-

tioned and good, but it tells neither them nor us anything about the shape of goodness; it tells no one what society wants done and, hence, what to do. When 170 million men live and make their living together, the fact that every one of them is equipped with a burning twenty-four hour conscience does not make less necessary the active presence of an over-all organizing and directing force to work out the level and trend and allocation of resource use and the division of product. To rely for this on the unguided, unco-ordinated consciences of the managements of economic blocs is to abandon order as well as human dignity. Only society is suited and fitted to deal and play these cards. If its standards are nebulous, at least they are its own, and they can be manifested and carried out with some sense of total purpose, in a total pattern which it is society's task alone to design and weave.

Consider the wage, investment, and price decisions to be made by corporate managements, and ask what contributions consciences can make to the solution of the problems they pose. These decisions affect all of society, not just the persons in the immediate family; and not all of those even immediately affected can possibly be made happy by any decisions which can possibly be made. This is quite an assignment to impose on innocent, artless consciences. I am not at all sure that they can stand the strain. Ponder the plight of the management of a giant firm producing a basic commodity, employing thousands of workers at good wages, making splendid profits, and presently facing a crippling strike unless it accedes to a demand for a wage increase. The increase can easily be passed along in higher prices. Workers want higher wages and no interruption in employment; consumers want continued output at an increasing rate and so do stockholders. The public does not want further inflation, and large numbers of small firms do not want further increases in wages. The White House, which wants high production, full employment, healthy wages, abundant profits, and low prices, now admonishes industrial statesmen to recognize their public responsibility and to adopt measures appropriate to the maintenance of equity, full employment, stability, and progress. The management—as allocator, distributor, stabilizer, trustee, conservator, prophet, and chaplain, as well as manager—consults its conscience. The diagnosis of the attending psychiatrist will be "multiple schizophrenia": The management's personality will not be split. It will be shredded and powdered!

V

So, again, where do we go? We are searching for a force or set of forces which will give us direction as well as protection—which will both guide and guard—which we can accept with self-respect because

it is of us and belongs to us, and which will permit us to enjoy the abundance of bigness with confidence. This, of course, is the way economic systems are made: inquiring, searching, experimenting, modifying. None of us will ever know the outcome, because political economies never arrive; they are eternally en route. It is possible, however, to guess at the direction our journey will take and at some of the scenery and stops along the way. Edward Mason writes of our failure to formulate an apologetic for our twentieth-century economic system. I suggest that at mid-century our economic arrangements are too nebulous and are changing too rapidly to permit even systematic identification, let alone a defense, and that what we are really lacking is not so much a convincing apologetic as a system about which an apologetic can be constructed in any but the most general terms. I suggest, further, that both a system and its philosophic defense lie ahead on the road we are traveling.

My own prediction (and I stress that I am predicting, not prescribing) is that the years ahead will see a great increase in conscious, collective, governmental controls and of governmental enterprise; and that bigness will be a major focal point of the development. The development will reflect a growing, intensified concern over the private possession of economic power so vast that even its possessors are frightened by the implications of their holdings.

Our giant firms are sitting like fat, delectable ducks, virtually inviting the government to open fire with something more effective than antitrust. The invitation will be accepted. One cannot even guess at the occasions which will prompt the firing or the pattern which the firing will take. It will not be laid down in a single, all-embracing, finely articulated barrage. Its force and timing will almost certainly be affected by the narcotic influence of social responsibility and by fitful spurts of confidence in the efficacy of antitrust produced by sporadic paper victories won by the Department of Justice. But the conviction that great power over the economy must reside only in a government of the people will be acted on relentlessly, bluntly and with force. Events will count more heavily than fine logic in determining the action; but events will surely occur, and public action to repossess the power to economize will surely follow.

As men ponder these matters they will not fail to be impressed by a panoramic spectacle provided by the giant firm itself—far-flung bureaucratic enterprises operating with acceptable efficiency in response to a melange of (only partially identified) motives and incentives, each enterprise held in dubious ownership by thousands upon thousands of persons passively quiet in their shadowy remoteness, and each enter-

prise apparently quite capable, under responsible direction, of co-ordination with others in bureaucratic operation on an even wider scale. It could occur to these men that directed co-ordination, responsible under society's government to society, can be had. It could occur to them that its achievement, far from constituting a threat to cherished freedoms (how free is the individual who is subject to the coercion of compassionless markets or the whims of corporate conscience?), might be a wholly rewarding expression and embodiment of freedom. As the import of these things breaks upon them, it could happen that a faraway expression will steal across their faces. It could be that men will ask themselves, "Why not?"

ECONOMICS BY NEGOTIATION

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The theme of this session is the impact of power blocs upon the operation of economic forces. There is an undeniably sinister connotation about the term "power bloc," devolving mainly from the affection that the competitive ideal has always been able to command from economists. Few persons today would demand the establishment of the completely structureless, fluid, and implicitly anarchical social order that absolutely free competition would require. Yet viewed even from a more moderate version of the competitive standard, trade-unionism inevitably emerges as an institution with a shady reputation and inherently hostile social designs. Partly this is a matter of ideology. Partly it is an image deriving both form and substance from evidence of arrogance, corruption, and violence here and there. In the main, however, the dubious standing of unionism stems from a comparison of doubtful validity between the organized labor market and the perfectly competitive one, and from a measure of ignorance about the effects as well as the effectiveness of unionism as a power organization.

Speaking candidly, one of the major purposes of unionism is to get monopoly power, in order to prescribe through negotiation with employers the institutional rules that are to regulate the labor market. There is no question that collective bargaining modifies the operation of competitive forces—diverting, reshaping, and restraining them, although not achieving their complete elimination by any means. In the pursuit of its interests, the union may also affect the competitiveness of related product markets, by direct action or in indirect effect.

Although its economic importance is not to be gauged by figures alone, unionism remains a minority movement even today. For 1956 the Bureau of Labor Statistics estimates there were 17.2 million union members in the continental United States, attached to 189 national or international unions and representing about one-third of all nonagricultural wage and salary employees. Wages and working conditions of these workers were regulated by roughly 125,000 collective agreements. Unionism is strongest in manufacturing, construction, transportation, and mining. It is weakest in the service trades, agriculture, and white-collar work generally.[1] During the postwar years unionism has barely held its one-third share of nonagricultural employees, growing mainly

[1] *Monthly Labor Rev.*, Oct., 1957, pp. 1207-1208, 1209, n. 16.

by enforcement of membership in expanding firms governed by union security clauses and by extensions here and there to hitherto nonunion firms mainly in partially organized industries. So far no major breakthroughs into unorganized sectors have occurred, nor are they likely in the near future.

Passing for the moment the questions whether labor markets would be adequately competitive without collective bargaining, or whether if they were this would resolve the issue in favor of free competition, unionism does project a conflict between two widely shared values: freedom to compete and freedom to associate. In turn this conflict lies at the roots of all debate over public policy towards collective bargaining. Only by opting for one of the two extremes can one attain an unambiguous position. For most of us, I suspect, this kind of hard choice is unacceptable. Since there is no higher level of reconciliation, compatibility must be purchased at the price of pragmatic compromise—an inelegant and unsatisfactory solution to purists, but a tenable one to those who would sacrifice the perfection of logical consistency for a reasonable and humane pluralistic social and economic order.

On the one side is competition, valued both because freedom of choice is good in itself and because free competition is the route to consumer sovereignty and the welfare optimum. On the other is freedom of association, modified, it must be admitted, by union security clauses, but still basically an exercise of free choice and justifiable on this ground. For workers, however, freedom of association is a means to the promotion and protection of employee interests, because it affords added control over the employee's environment. If you wish, collective bargaining gives expression to producers' sovereignty, bringing the terms and conditions of the employment relationship under regulation, substituting an institutional system for both the unchecked workings of competition and whatever discretionary power the employer would otherwise enjoy.

Admittedly, the union is a monopolistic device of the cartel type. Inevitably this puts it under a cloud so far as the competitive ideal is concerned, although it would be an egregious error to conclude that collective bargaining is anticompetitive in every respect. Moreover, there are different kinds of unionism and different kinds of labor markets. Policies in this sphere have been shaped far less by ideology than by the varying characteristics of the environment in which unionism must function. These very differences underscore the difficulty of determining criteria of reasonableness; hence of fixing statutory or judicial limits to union activities in the economic field.

I want now to consider four major ways in which collective bargaining and unionism affect competition: the determination of wages and working conditions, the allocation of workers and of jobs, the relation-

ship between labor and other factors of production, and rivalry among firms for customers.

1. *Competitive Determination of Wages and Working Conditions.* As a hypothetical construct, the perfectly competitive labor market determines the wage and rations the labor supply in a single completely impersonal operation. Entry and movement are free, the wage is flexible, the participants are informed and they act independently. No party can dictate the terms and conditions of employment. Mobility on both sides establishes uniform terms and conditions—no real negotiation is possible or necessary. Workers and employers alike have many rivals and many alternatives. Ease of substitution dispassionately polices each side, while the employment relation has almost the fleeting character of ships that pass in the night.

Here, then, is a labor market completely without structure, bereft of any institutional rules governing entry, movement, exit, or wage determination and administration. Indeed, the very lack of regulation implied by this kind of market accounts alike for its want of relevance as a social ideal and its unattainability in practice. Neither workers nor employers wish the employment relation to be dissolved completely by the corrosive solvents of free competition. Each side wants power to shape that relation. Collective bargaining permits that power to be shared and hence provides for a jointly competitive and co-operative system of regulation, giving structure to the market. The basic problems for public policy center upon the range and character of this joint system of control, and its ability to accommodate the benefits of incentive and efficiency that competition so effectively provides.

The object of every union is to end competition over wages in the shop or plant, by negotiating a structure of mutually exclusive job classifications, each with its standard minimum rate, commonly applicable to all employees in the bargaining unit regardless of union membership. Thenceforth no employee can offer to work for less than the going rate on a given job. This, of course, need not wipe out all competition among employees in the unit, for there may be opportunities for promotion and also the chance to increase earnings under an incentive system.

Moreover, negotiated wage determination tends to spread to all employers serving the same product market, again under the impetus of the union's desire to take wages out of competition. This rather than vain power-seeking lies behind organizing campaigns and the use of strikes and boycotts in their behalf. Usually the boundaries of the product market are local or regional, and these define the geographic scope of the associated institutional or organized labor market. If the union's goal is to make wages noncompetitive rather than to enlarge employment by calculated wage discrimination, it will seek uniformity

—in going rates for key jobs, in the other main terms of employment, and in the "going increases" sought. This is done variously: by parallel single bargains, by pattern-following where employers are few, by association bargaining (the true industry-wide case), or on occasion by form contracts where employers are numerous.

Industry-wide unionization does not entirely eliminate competition for or among workers. Nonpecuniary differences among firms can still influence hiring and turnover, not to mention morale and efficiency. Uniform rates and terms by no means need equalize comparative labor or total costs, for differences in quality of labor, technique and equipment, and managerial efficiency will still persist. Finally, the struggle of firms over shares in the product market will continue to pit the different groups of union workers against each other.

There is no doubt, however, that the negotiatory system reduces the role of competition in wage determination. Yet it would be needless exaggeration to say that supply and demand no longer have any influence, or that wage-setting now becomes wholly a matter for the discretion of the parties. Clearly, the range of indeterminacy is still finite. However, at the plant level the problem of internal wage relationships is not even contemplated in the usual competitive model, while the labor markets we actually have fail to provide anything like a precise solution. Absent unionism, the employer must rely on his own discretion to design the job and wage structure, linking wages for key jobs to going market rates where possible and interpolating the other internal job rates either haphazardly or in some formal fashion. With collective bargaining, the same problem continues, only now discretionary power is shared with the union. The setting of key rates and the interpolation of others become a much more delicate question. The going rates now depend upon the relevant areas of wage comparison urged by the union while interpolation gives much greater effect to matters of equity and tradition. Joint wage-setting and administration give greater effect to employee interests than does the unilateral approach, but both approaches rest upon power rather than perfectly effective competition. Realistically speaking, competition in this hypothetical sense offers no practical solution to the problem of internal wage structure, although competition as reflected in the going rate continues to have weight, more so than in the absence of unionism. Indeed, unionism usually reduces local interplant wage diversity, which is otherwise made large by the imperfections of the unorganized market.

As for working conditions, unionism has undoubtedly restricted daily and weekly hours, although competition itself has also favored this trend in the past. More recently unionism has probably played the

greater role, also lowering annual hours through negotiation of more paid holidays and vacations, and lifetime hours through promoting a later school leaving age and an earlier age for retirement. This network of bargaining and legislative measures has reduced the freedom of workers and employers to compete over working hours, to some extent cutting potential gross national product.

2. *Competitive Allocation of Workers and Jobs.* Under collective bargaining the labor market acquires a structure of dual character, composed on the one side of joint wage determination and on the other of a system of rules to control the distribution both of workers and of jobs. Control is exerted at the point of entry (hiring), over the movement of workers between employers and between jobs, and at the point of exit (layoff, termination, or discharge). As Clark Kerr has shown, in the craft market control of entry (the closed shop and apprenticeships) and of movement from employer to employer in the same skilled occupation is decisive.[2] For the industrial case entry is relatively open but only at the bottom job levels, while the main movement is up and down the occupational ladder in the given firm or plant.

Ignoring for the moment the strike and lockout, collective bargaining affects the free flow of labor in three main ways: entry into the skilled trades, which is undoubtedly restricted to some extent; progression up the occupational ladder in industry; and imposition of uneconomically high or rigid wage rates that at times may prevent clearing of the market. All three partially foreclose free competition of workers on the one side and free competition of employers for labor on the other. In the industrial case, the employer's freedom to select his force may be restricted by the closed shop (now largely illegal)[3] and by seniority rules governing the internal distribution of workers among jobs. However, these seniority rules usually are flexible enough to allow competition and incentive still to operate where valid differences in efficiency can clearly be shown.

While the purpose of these controls over labor flows is not solely economic, their impacts upon wage structure in its several dimensions are clearly anticompetitive. For the economy, the main question, as with collective wage determination itself, is whether they are sufficiently monopoloid seriously to distort the wage structure on the one hand and the allocation and efficiency of labor on the other. Responsible judgment of the issue ought to depend upon empirical inquiry rather than

[2] Clark Kerr, "The Balkanization of Labor Markets," in E. Wight Bakke and others, *Labor Mobility and Economic Opportunity* (New York: Technology Press of Massachusetts Institute of Technology and Wiley, 1954), pp. 92-110.

[3] For 1954, BLS found that of 7.4 million union members, 12.4 per cent worked under preferential union or closed shops, while including these 64.2 per cent had some form of union shop. *Monthly Labor Rev.*, June, 1955, p. 652.

speculation from purely competitive premises alone. At the same time such interpretation ought to allow also for the sluggishness and imperfections of actual nonunion labor markets, which are the practical alternative to the jointly regulated market.

3. *Competition between Labor and the Other Factors of Production.* Slichter has pointed to a mixed category of restraints whose intent is to make work for the members of a certain group, either by defeating the laborsaving effects of new technologies or by obstructing the introduction of new machines, processes, or forms of work organization. These practices include: indirect efforts to offset capital substitution, by limiting output, limiting the speed of machines, requiring unnecessary work or men, fixing the quality of output; direct efforts to prevent laborsaving innovations, by refusal to work with new tools, equipment, or prefabricated products, or by nullifying potential economies through penalty wages; and direct efforts to prevent competition between types of labor, particularly by claiming jurisdiction over particular kinds of work.[4]

Policies of this type are peculiarly characteristic of craft unionism. Usually they have emerged where work opportunities decline or undergo pronounced fluctuation and a craft organization is involved. Thus these practices have gained a certain notoriety in the entertainment field and in the printing and building trades, while they are undoubtedly costly on the railroads, where they are conventionally lumped together as feather bedding. That they are anticompetitive goes without saying, for they shackle flexibility, adjustment, and growth. Fortunately they are often self-defeating. No one knows their actual cost, but it is probably exaggerated in the public mind.

Make-work practices are concentrated in the craft trades and in industries organized on craft lines. Job control and protection of job opportunities are structural features peculiar to craft unionism, with its strong emphasis upon regulation of entry into a skilled occupation. Moreover, traditional skills are particularly vulnerable to the competitive effects of technical and economic change, because the losses are visible and concentrated, often threatening disaster to the group. By contrast, change is much less threatening to the usual industrial and mixed unions, because their occupational composition is so much broader. Ordinarily they lack power to obstruct change, while their incentive is to gain wage increases not by futile efforts to restrict entry but by exchanging flexibility of innovation for them, on tacit recognition of the connection between increased wages and increased productivity. Where

[4] Sumner H. Slichter, *Union Policies and Industrial Management* (Brookings, 1941), p. 166; see also Benjamin Aaron, "Government Restraints on Featherbedding," *Stanford Law Rev.*, July, 1953, pp. 680-721.

labor displacement effects threaten to be severe these unions usually follow a policy of control, without resorting to outright obstruction.

4. *Competition among Firms for Customers.* During the postwar inflation, much has been made of the role of formal industry-wide bargaining in reducing price competition among sellers and in indirectly promoting price increases, even though association bargaining is still not widespread and where found is mainly local or regional in extent. In any case this view lays too much stress upon a particular form of collective bargaining. Far more decisive is the broad emergence of market-wide unionization of certain product markets, regardless of the system under which bargaining is conducted.

Market-wide unionism works against price competition in two major ways. By making wages more rigid on the downside, it makes costs more rigid, discouraging price reductions and encouraging nonprice competition. It also fosters the uniform going increase, which makes it easier for sellers to raise prices without fear that their rivals will not follow. This is particularly likely when sellers are few. Similar results can also occur where a single strong union deals with a large atomistic group of small firms, as in local distribution and services.

In these instances reduced price competition occurs as the side effect of the union's promotion of its economic interests by direct pursuit of a given wage policy, exerted where unionization is market-wide. There is no accompanying effort directly to limit the access of new or "outside" firms to the product market, nor to join with existing firms to enforce a particular price policy. Instead the union uses its weapons independently, keeping the trade or industry fully organized and following a policy of wage uniformity.

A much more direct reduction of price competition has occurred in certain local markets where unions have sheltered employers by agreements to exclude "outside" competitors. The best-known instance is the Allen Bradley case (1944), involving the electrical equipment industry in New York City. There Local 3 of the IBEW joined with the employers' association to exclude outside suppliers, refusing to install outside equipment in exchange for a monopoly of the local job market.[5] Other joint monopolies have been formed involving electricians in Chattanooga and lathers and plasterers in Chicago, where the unions supplied men only to a contractors' association. Other variants have included the electricians, plumbers, and painters unions, where men either were supplied only to specialty contractors or to general contractors only at a penalty wage premium.[6]

[5] *Allen Bradley Co.* v. *Local Union No. 3, International Brotherhood of Electrical Workers*, 325 U.S. 797 (1945).

[6] Archibald Cox, "Labor and the Anti-Trust Laws—A Preliminary Analysis," *Univ. of Pennsylvania Law Rev.*, Nov., 1955, pp. 266-268.

In the Allen Bradley case, which involved interstate commerce, the decision of the Supreme Court outlawed joint agreements for such purpose between a union and employer association. However, the Court exempted separate parallel agreements with single employers, although these could achieve the same sheltering effect, while it also left the union free to refuse to install outside products by acting on its own, presumably on the theory the union was promoting a legitimate interest. Moreover, where sheltering agreements do not affect interstate commerce, their licit or illicit nature must depend upon the character of state and local laws and the vigor with which they are enforced.

Closely related to sheltering activities are union efforts to establish and enforce a price scale for products or services. In some cases the union has refused to supply men to contractors unless they observed a price scale. Union fishermen have refused to supply fish to canners except at a self-designated price. Construction unions have refused to supply men on highway jobs unless contractors' bids were rigged in advance. (*Ibid.*, page 266.) Less direct forms of price-maintaining activities would include the "holidays" unilaterally introduced by the United Mine Workers in the late forties; also strikes and boycotts against nonunion competitors.

Barring explicit agreements with employers to enforce a price scale, price-supporting activities of unions link directly to classically considered "legitimate" union interests. With an employer agreement, however, the main problem is the possible emergence of co-operative bilateral monopoly, where the conflicting interests of the union and employers give way to joint exploitation of consumers as third parties. Here the new relationship with the employers is masked by the union's traditional interest in protecting and promoting a noncompetitive wage scale and common terms of employment. Because this interest may well extend to price and is inseparable from the entire logic of collective bargaining, it is extremely difficult to develop an acceptable distinction between reasonable and unreasonable uses of union power. The choice between effective competition in product markets and joint monopoly is easy. That between free competition in labor markets and the measure of monopoly implied by collective bargaining has been resolved long since by public policy in favor of collective bargaining. The rub comes over what are reasonable aims and methods for unionism. Wisdom lies in recognition of the need for some limits, if consumers' as well as producers' interests are to be recognized. To the doctrinaire, unfortunately, the choice is an all-or-nothing one—between full worker competition or weak unionism on the one side and unionism at any price on the other. The much harder task is to define what is reasonable within these

extremes—a matter not likely to be resolved by any single all-embracing principle.

Take, for example, the problem of strikes and lockouts, which obstruct the free flow of commerce and hence competition among workmen, employers, sellers, and buyers. In principle the right to strike or to lock out is now secure because the law recognizes its essentiality for collective bargaining. However, when great strikes occur, conflicts emerge between the right of the parties to resort to the ultimate weapons of economic warfare and the claims of the public to continued production and distribution of those goods and services deemed essential in some way to health and safety. But what constitutes an "essential" good and who is to decide? When is the public interest clearly threatened and who is to decide when it must supersede the private interests of the parties? How, in such cases, are private conflicts then to be resolved?

Merely to pose the questions is to indicate the difficulty of framing an acceptable policy. Just as the union interest in wages and working conditions tends to spill over into the product market, projecting problems of business competition and the consumer interest, here it may engulf the public interest in direct and costly ways. So far as the great strike is concerned, any workable approach ought to be flexible and pragmatic rather than rigid and dogmatic, a possibility that fortunately is fostered by the obvious decline of emergency strikes in recent years. However, if highly centralized bargaining were to spread widely in times to come, the emergency problem may well return, posing some hard choices for public policy.

Turning now to evaluation, if unionism is an effective anticompetitive force in our society, then its influence ought to show up clearly in the behavior of both relative wages and the general wage level and less obviously in the allocation of labor.

Regarding relative wages, unionism has exerted its greatest impacts upon plant wage structures and upon interplant rates for comparable jobs usually within an institutionally separated local labor market. Since the interfirm mobility of more senior industrial workers is low anyway and for administrative reasons industrial employers prefer stability of job rates even without unionism, the advent of collective bargaining is less a matter of adding to wage rigidity than it is one of making the plant structure more formal and more responsive both to external comparisons and to internal considerations of equity. Beyond the single employer, unionism introduces the concepts of the going rate for comparable jobs and the going increase for all jobs, usually for similar firms in the same locality. Further extension of uniformity in both senses becomes relevant and practical only when the product market is

regional or national and there is market-wide unionization.

In the behavior of the interindustry wage structure, uniformity yields to dispersion. As numerous studies have shown, this dispersion has been persistent for many years, with no tendency towards equalization and with the rank order of industries quite stable. As a source of wage advantage, unions have played a very modest role. Newly organized ones probably achieve a temporary wage advantage, as Douglas noted nearly thirty years ago. Also, local craft groups can often distort wages in their favor, through restriction of entry and at times manipulation of the product market. Otherwise, however, conventional economic factors such as differences in labor productivity, input ratios, product demand, and product market structure still are decisive for determining interindustry wage differentials. Moreover, neither incentive nor power requirements favor union wage policies deliberately aimed at large-scale modification of interindustry differentials.

The interregional wage structure is a similar case. Since the war, unionism has reduced the North-South wage differential in some national product industries but, in the main, market forces have continued dominant, while power requirements for greater uniformity if anything are even more formidable because of the difficulty of achieving market-wide unionization.

On the occupational side, there is a lengthy trend towards relative compression of skill differentials, helped temporarily by equalizing effects of wartime wage controls. Once more, however, market forces have proved dominant, expressing themselves in changed relative supplies of and demands for labor of low, moderate, and high skills. Further, the American unions do not believe in wage equality for all job rates. Their real equalitarian goal is the much more subtle one of parity of status between the blue- and white-collar worker—symbolized by the postwar drive for fringe benefits.

In the area of income distribution, the evidence clearly does not favor the view that collective bargaining has significantly modified the share of wages in national income. Instead, changes in relative shares have arisen from shifts in relative product weights, shifts in the forms of enterprise organization, and the regulatory and income-redistributing activities of government. Unionism has contributed somewhat on the political side, but not decisively. As for personal income distribution, government has been the main force in reducing inequality, although unionism has aided certain groups through negotiation of welfare funds and political support of larger social security benefits.

Let me turn now to collective bargaining and the general levels of wages and prices. One basis for concluding that the unions have con-

tributed to price inflation is their vigorous no-cuts policy, which props up the wage structure in recessions and so prevents the downward spiraling of wages and prices that would occur if competition were fully effective. This has helped to sustain personal income and consumption in the postwar recessions, as Slichter has recently noted. It has also introduced a ratchet mechanism that limits wage movements to an upward direction, providing successively higher cost floors for each subsequent revival. This is desirable for those who prefer a secularly stable or slowly rising price level to a falling one.

The larger and more decisive issue is whether unionism has accelerated the trend line of advance in wage costs along these successive check points. If so, has the rise of wage costs outrun the trend of increased labor productivity? Evidence collected by the BLS for the private nonagricultural sector during 1947-56 shows that this is clearly true: total employee money compensation per hour rose 61 per cent, productivity per employee rose 26 per cent, and real employee compensation rose nearly 33 per cent.[7] However, this by no means proves that union wage pressure was solely responsible. The price level responds to aggregate demand as well as costs, while structurally it reflects import prices, production costs in nonunion as well as union sectors, profit margins, and local conditions of demand and supply.

Yet there are grounds for suspecting that unionism has exerted a cost-push, although probably its impact has been small. Admittedly excess aggregate demand was dominant during 1947-48 and 1951-52. However, we have not had excess total demand in the past six years and yet wage costs have continued to rise. Moreover, the apparent failure of unions to modify significantly wage differences between union and nonunion groups and industries does not dispose of the union wage-push. In times of high employment, wage gains in the union sector will spread outward, mainly through induced shifts in nonunion labor supply and efforts of employers to thwart unionization.

During 1955-57, expansion centered in capital goods and government demand, while the consumption sector had substantial unused capacity. Monetary policy turned restrictive in 1956, although indirectly it encouraged the banks to shift heavily into business loans. A localized demand-pull erupted in parts of the capital-goods sector, fostering an upward wage-price movement that was translated into a cost-push for the consumption sector. Undoubtedly union wage pressure had a hand in this performance, although it was not the only factor. Particularly decisive for the price level was the sharp drop in the annual increase in

[7] *Productivity, Prices, and Incomes*, 85th Cong., 1st Sess., Joint Economic Committee (Washington, 1957), p. 277.

labor productivity during 1956-57—a decline of at least two-thirds in the private nonfarm sector.

Conceding that unionism has contributed to creeping inflation, it seems to me dubious reasoning to lay the whole blame upon union wage policy. Yet once more we have before us the familiar proposals to deflate the system until unemployment supposedly halts the unions, to dissolve market-wide unions and industry-wide employer associations, or to restore government wage control. It has still to be shown that these approaches would even work, let alone stop inflation. Each one of them would exact a heavy price, for returns that are purely speculative if existent at all.

For those who do not take lightly proposals drastically to remake our existing system of institutions, the burden of proof lies with the proponents of change. The immediate first step would logically be to demonstrate a clear relationship of cause and effect, if we are not to risk cures that may turn out to be worse than the disease itself.

Admittedly we do have a problem of slow secular inflation, to which the unions may well be contributing. Yet it is possible to look at the matter in a somewhat different way. First, the immediate difficulty today is not one of inflation, actual or impending, but of inadequate effective demand. Second, for the long run efforts should be made to raise the long-term rates of growth in output and productivity over the whole system. Postwar, both rates have been low, here and in the United Kingdom. For this very reason what is basically a problem of investment and over-all efficiency has shown itself in a different guise—as a problem of wages and prices. The latter view overlooks the strategic middle term: adequately rising labor productivity to offset rising wage costs. In turn, failure to perceive this vital link can lead to the wrong solutions. To achieve faster growth there is no obvious reason to destroy or disrupt the existing system of collective bargaining, much less to fetter the economy with a restrictive monetary and fiscal policy. On the contrary, if we could raise the average annual rate of increase in labor productivity from, say, the present 3 per cent to 4, the wage-price problem would become endurable even if not completely resolved.

It may of course be argued that the unions themselves have held down the growth of productivity by their regulatory impacts upon management. Clearly this problem deserves more study. Against this view one can argue that union pressure has stimulated management and promoted investment; also that no clear showing has yet been made that unionism has reduced gains in productivity, either over-all or for particular industries. Certainly the ability of industry to maintain pretax profits as a relative share, together with the failure of unionism

itself substantially to raise the percentage share of wages, suggests that business initiative has proved compatible so far with the spread of collective bargaining. If the over-all growth of the system has been somewhat deficient, correction lies in recourse to factors more strategic than those apparently encompassed by the domain of collective bargaining alone.

To sum up, unionism does reduce the influence of competition, particularly in the determination of wages and hours. Through collective bargaining, unionism has strongly affected local setting of plant and interindustry rates. It has strengthened and extended the operation of the wage-ratchet mechanism. It has also contributed to price inflation through a continuing wage-push. Beyond these, collective bargaining has reduced the competitiveness of product prices, while in certain local craft trades it has directly interfered with the competition of business rivals. Clearly, too, it has impeded to some extent the competition of workers for jobs and the free flow of industrial labor among employers.

Yet the impact of unionism is not wholly anticompetitive. Its main thrust has favored innovation, not obstructed it, while the notorious exceptions have centered in craft trades and industries. At the same time, the advent of collective bargaining has not eliminated competition among sellers. Indeed, it has fostered it in new ways, by giving local union groups incentive to help their managements keep pace with their rivals. Finally and paradoxically, collective bargaining may well have increased competitive processes in many labor markets, reducing "natural" market imperfections by aiding the flow of labor through providing a more effective labor exchange and making wages for key jobs more sensitive to what rivals are paying for comparable work. Viewed in the large, the impact of unionism so far has not led to a vast distortion of the wage structure or of the distribution of the labor force, or a deliberate leveling of all differentials, or a glacial freezing of growth and flexibility in the whole economy.

The American system of collective bargaining has proved quite capable of developing an acceptable symbiotic relationship with competitive private enterprise. The results have not been perfect and there is no denying that unionism has its seamy side. So far, however, the case for major changes in our bargaining system rests upon speculative preconceptions about the cause and control of inflation, joined to a curious preference for the risks of a laggard economy over those of an adequately growing one. With so much at stake, surely this is a slender basis upon which to proceed.

DISCUSSION

Calvin B. Hoover: One could hardly comment adequately on these two excellent papers without producing two more papers as substantial as these. This I must and will not do even if I could.

I have previously taken my stand in agreement with Professor Lewis' position that the bigness which now characterizes American industry, together with corresponding changes which have taken place in our other economic institutions, represents a fundamental change in the character of the American economic system. It is difficult to survey the process of industry-wide wage and price determination in the steel industry, for example, during the last couple of decades and find any close approximation to the old-style competitive model. Similarly, it would, however, be just about as difficult to find a close approximation of old-style models of simple monopoly, oligopoly, or imperfect competition.

The older forms of competition have not, of course, disappeared and new forms of competition have appeared. The term "competition" is, however, so broad that quite opposite elements and developments can be brought under it. Indeed, some of the newer *manifestations of competition* are precisely those which reflect bigness and a change in the character of the system.

I also agree with Professor Lewis that particular decisions made by the managements of corporations "to protect the public interest" are no doubt admirable from a moral standpoint but that such protection is quite different from the process of profit maximization controlled by competition. The management of the United States Steel Corporation announced a reduction in steel prices in 1948 and resisted a demand for an increase in wages, not primarily in order to increase sales through taking business from competitors, since price leadership pretty well assured that this would not happen, nor to expand the market for steel, since the price elasticity of steel would hold out no great hope of profit from such action. Instead, the management has claimed that this action was taken in order to help fight inflation. This might indeed be claimed as "an act of economic statesmanship," even though the price reduction was later rescinded and a wage increase granted when it became obvious that the price reduction in the case of steel had been ineffective in checking general inflation. It is a far cry, however, from the economic system of the good old days when we were able to rely upon entrepreneurs acting in the public interest even in the total absence of moral sentiments on their part.

Again I agree with Professor Lewis about the pathos of trying to run an economic system by admonition. Yet if his picture of our present economic system as a Bumble Bee economy is the correct one, corporate executives nowadays are forced to make decisions with respect to prices, wages, and levels of output of a kind which may be of significance to the whole economy and which they would never have to make under an approximation of pure and perfect competition. Under the simplest old-style competitive model the entrepreneur could be counted upon to protect the capitalist against excessive claims of the suppliers of production factors because he was the capitalist

and similarly to protect the consumer against prices embodying abnormally high costs of production because the entrepreneur's competitors left him no alternative.

Under our present economic system, however, the self-interest of the management of a corporation might in a particular situation well dictate the acceptance of a wage increase which could be passed on to consumers or deducted from the potential dividends of stockholders without any loss to the management. If the government is momentarily following a monetary and fiscal policy which facilitates passing on the wage increase in the form of higher prices, it will be the consumer who pays. If we are trying to prevent inflation by a restrictive monetary and fiscal policy, it may be the stockholder who pays if prices cannot be raised enough to maintain profits or the public may suffer through reduced employment and output if prices are raised and credit is restricted.

This brings me to Professor Hildebrand's paper. It is perhaps unwarrantable to state his position in a greatly oversimplified way. My oversimplification of his position would be this: Labor unions may and indeed do exercise some degree of monopolistic power but it does not after all amount to much or have great significance for our economic system at the present time. Let me say at the beginning that the weight of opinion of specialists in the labor field, to the extent that I am familiar with it, supports Professor Hildebrand's position. Nevertheless I am skeptical.

Professor Hildebrand, as is so often done, cites among other evidence the alleged constancy of distributive shares in support of his position that labor unions have been unable to alter significantly the proportion of national income going to labor. Professor Hildebrand would appear to be on safe ground, for this doctrine of the constancy of distributive shares bids fair to become almost as widely accepted as, say, Gresham's Law.

One curious feature of this acceptance of the doctrine of the constancy of shares, however, is that compensation of employees as a share of national income has in fact increased substantially during the last three decades. This is generally explained away, however, by reference to the changing structure of our economy, such as the movement of labor out of agriculture, the increasing share of governmental employment where there is no corresponding capital factor to be compensated, and the like.

The confusing effects of structural change can, however, be minimized by considering what has happened to the shares of national income originating in corporate business which constituted some 55 per cent of national income in 1957. Between 1929 and 1957, compensation of employees in this sector rose from 75 per cent to 80 per cent of national income. Thus the share going as compensation of employees increased in a little less than three decades by some 7 per cent of itself. Profits before taxes remained almost unchanged, declining only slightly from 21 per cent to a little less than 20 per cent. Net interest, however, declined from over 3 per cent to a small fraction of 1 per cent. Thus the combined share going to property or capital before taxes decreased by some 20 per cent of itself. Even these changes are not negligible.

But what happened to the share going to capital or property in the form

of profits and net interest after tax liability? During the same period the share of profits declined from about 18 per cent to about 10 per cent. If we combine the share of profits and net interest we find the decline is from around 21 per cent to about 10 per cent. In other words, the share going to property or capital was cut in half during this period of not quite thirty years. What had happened was that a relatively feeble state share-claimant in 1929 had attained a lusty parity with the property claimant by 1957. From 3 per cent in 1929 the share of government had increased to about 10 per cent.

It is often assumed that distributive shares should be measured before rather than after taxes. For some purposes this might be logical. But let us see. Suppose that, by some supermiracle, tax liability were cut back to its 1929 level and that the property share would retain all this "gravy." Would anyone wish to argue that the property share had not been increased thereby? Suppose as an alternative that wages and prices had so adjusted themselves after the tax cut so that the gravy was now ladled out, say, three-fourths as increased compensation to employees and one-fourth as an addition to the property return. Would anyone wish to argue that distributive shares had not been changed by this redistribution of most of the share previously going to government?

Of course, even if it could be proved that distributive shares had changed, this would not of itself prove that labor unions had had a causal role any more than the demonstration of constancy of shares would prove the contrary. But *if* the shares *did* in fact change substantially, it would at least eliminate the argument that unchanging shares in distribution proved that labor unions had not affected distribution.

The economic power of labor unions did not, indeed, play an exclusive role in this significant redistribution of income. However, the economic and political power of labor unions undoubtedly did play a role in preventing corporate management from recouping the relative losses incurred by recipients of property incomes through the state cutting in half the distributive share of property in corporate income while the share of labor was increasing appreciably. In the absence of the political and economic power of labor unions, corporate managements might have been able to resist wage increases until the share of property in corporate income had been more nearly restored to its former relative size.

When one recalls, too, that at the bottom of the Great Depression the profits share in the corporate sector was momentarily eliminated, one is further skeptical of the doctrine that labor unions have not significantly affected distributive shares. It seems highly improbable that the existence of labor unions was not a factor of strategic importance in the relative rigidity of wage rates during the depression and that this in turn did not affect the distribution of corporate incomes between employees' compensation and profits.

In summary, I feel that the complex of economic and political power of labor unions had probably had a greater effect upon prices, money and real wages, and the distribution of income than Professor Hildebrand, in agreement with most specialists in the labor field, apparently believes.

Such power as labor unions have is indeed inextricably intertwined with the powers of big business in our modern economy. These powers, I believe, are at least as complementary as they are countervailing, in that both these powers may be pushing in the same direction on prices. If this were not so, we would regard with more equanimity the degree of monopoly power exercised by both big industry and big labor.

From some points of view, it is remarkable how well our system of modified capitalism works, even if one concludes that the character of competition has changed and that profit maximization in the interests of the stockholders is no longer so clear a beacon to management as it once was. If the economic and political power of labor unions have played a dynamic role in changing the distribution of income, this change has mainly been in a socially desirable direction. The higher profits which some corporations and the higher wages which some unions have obtained through the exercise of monopoloid powers have probably not caused really grievous social losses to those individuals who did not or could not benefit from organization in a society with so high an average income and with the degree of egalitarianism in distribution which now characterizes our own. However, the probability that labor union members are no longer typically in the lowest deciles in income distribution does raise a question in this connection.

What is more serious is the type of "cost-push inflation" which the present organizational form of our economy makes possible. It may be that monetary controls can keep this cost-push inflation under control. So long as a sufficiently restrictive monetary policy is followed, processes which are in some respects closer to the competitive, free enterprise model apparently have considerable effect on keeping prices from rising. Whether monetary controls can prevent cost-push inflation, while still permitting an adequate rate of economic growth is unfortunately much more doubtful. Recent history does not reassure me on this point.

Professor Hildebrand has referred to the low rates of productivity increase in the United States and the United Kingdom in recent years. I fully associate myself with the concern which he expresses in this connection, particularly when one compares these rates with those of Soviet Russia. I also agree that increasing our rate of growth depends both upon raising physical productivity and the general level of demand. It seems clear, however, that raising wage rates does not of itself create this additional demand. The problem of creating additional demand without an unacceptable degree of cost-push is indeed a complex one.

There seems little doubt that we will indeed have the increase in governmental controls and direction which is delicately recommended by Professor Lewis. While it is perfectly true that the growth of the power of the state both in the United States and in Western Europe does not seem on balance to have resulted in a net diminution of human liberty, there can be little doubt that at some stage in the process of take-over by the state this danger arises.

I recall what one official in Yugoslavia said to me last summer: "We looked at the record of the authoritarian, planned economy in Soviet Russia. We

could see that it had been and we had no doubt that it would continue to be economically highly productive. But at what a cost to human liberty! So we decided that we must get the state out of the economy." Still another official said to me: "We came to the conclusion that the state is the enemy of socialism." Here were the officials of a Communist regime returning to the original Marxian doctrine of the necessity for the withering away of the state if the individual was to be free. It is quite another matter whether the Yugoslavs are really getting the state out of the economy. I do not believe that they can, even to the extent that the power of the state can be limited under modern capitalism.

We shall require an extraordinary combination of intelligence and tolerance if we are going to be able to work out the increased control and direction by the state which does seem, as Professor Lewis implies, the logical alternative to "economics by admonition," without eventual serious impairment of liberty. However far from conformity with some logical model our present complex organizational economy may be, I have little confidence in the results of trying to substitute a more logical one for it, if this means a massive extension of the power of the state.

EDWARD H. CHAMBERLIN: Professor Lewis has presented a highly entertaining and thought-provoking paper on the futility of admonition and on the multiple schizophrenia which must plague management's personality in an era of bigger business. Indeed, one is tempted just to lean back and enjoy this exercise in the lighter vein, without worrying too much about its implications. But I have been instructed to worry, and so I must do my job.

The economy, he tells us, is geared to gain, not goodness; and "social responsibility" comes off rather badly, as leading only to confusion and futility. Private income maximization is not only acceptable but indispensable, and it is even exalted into a duty for all. At this point in his paper, he must be thinking in terms of the atomized competitive model for which, as we know, such propositions with respect to the harmony of individual and social interest do have considerable validity.

But what of bigness and of monopoly power—which we are discussing at this meeting? Clearly this glorification of the pursuit of gain no longer has the same validity when we get away from the atomized model: that is where all the trouble comes from. His solution here would appear to lie in government "supplanting the market" when things get too bad, so that the economy becomes a mixture of individualism and collectivism. In fact, a great increase in such government control and enterprise is predicted (not prescribed) at the end of the paper, as the only answer to the recurring question of "where do we go from here?" Political problems, pressure groups, and the like are never mentioned, and one wonders how the social conscience would be made to prevail over private gain even in the public sector. Would not the government managers and regulators have to be "admonished"? At the height of the discussion of the weakness of "corporate conscience" we have an appalling picture of the industrial statesman faced with some eight or ten conflicting public responsibilities: full employment, stability, progress, high wages, low prices,

etc., followed by the psychiatrist's diagnosis of "multiple schizophrenia." But what will protect the public managers from the same ailment? The trouble seems to be that whoever is to manage, bigness is still there. The problem of resolving the inevitable conflicts between private and social interests will always be with us.

As one part of a program for meeting this problem, I have a suggestion to make: a good measure of economics by admonition. It appears to me that the very salvation of a free society may well lie in an increased sense of public responsibility and of morals on the part of those individuals who are in positions of power in the so-called "private" sector. At any rate, they certainly should not be told that in pursing their private gain without reservation they are performing a public service.

Clearly there are limits to what can be accomplished by education for public responsibility, and no one should expect too much too soon. This being so, it will be wise also for the government to carry a big stick. We must surely *agree with Professor Lewis that admonition is not enough.*

Professor Hildebrand has given us a judicious and exhaustive account of trade-unionism in relation to the economy. It is extremely useful to have this summary picture, always so well reasoned, of the pros and cons of unionism; and it is reassuring—indeed for me too reassuring—to have his judgment that, although unionism has many sins, when all has been carefully weighed there is really nothing much either for the public or members of our profession to be worried about.

I think it is fair to describe Professor Hildebrand's approach as one of "defense." We are told that in appearance unionism is an institution with "inherently hostile social designs." It seeks monopoly power and it is admittedly "a monopolistic device of the cartel type." Its various restrictive and antisocial practices are brought forward in detail—and the list is long. They are mostly conceded in some degree. But after each one comes the qualifying and offsetting considerations which will put our minds at rest. We must not, he says, compare the labor market with a perfectly competitive one (granted), and in the main the "shady reputation" of unionism rests on ignorance of its effects as a power organization (not granted). The sins of unionism are described as "probably exaggerated in the public mind" (one might also recognize that the public is so indifferent that it almost certainly underestimates them); and we are told in considerable detail that no matter how much monopoly power is achieved, there is always some competition left. (This latter argument could also be made for any product market whatsoever and would seem to imply that there is no problem of industrial monopoly either.) We are so often reminded of the difficulties of framing an acceptable policy, that it is not surprising to find that no policy proposals emerge. Except to do nothing.

But whether difficult or not to frame a policy, I think we should go to work on it. Perhaps we are not yet ready to put the finishing touches on a comprehensive program for the labor field, in the sense that we can on all matters at issue define with precision exactly how and in what degree labor's economic power should be restricted or redirected in the public interest. But I think we

know plenty to make a good start. For the most part, we know at least in what direction to go. Why is it that economists as a group shy away from the problem and refuse to apply to it even the most elementary tools of analysis? (Econometrics and input-output are not needed.) Such an application would reveal at once a great deal about the effects of unionism as a power organization, with strong presumptions as to what should be done about them. The economist does not, like the politician, have to worry about the problem of votes; and if he would speak out, with his traditional concern for the public interest as distinct from any special interest, including labor, he would give invaluable support to the politician, who might be more courageous to oppose labor's political power if he found public opinion more informed and more inclined to go along with him.

Without entering into new and less familiar lines of analysis, can we not say that most economists would condemn the whole wide range of restrictive activities in which unions so naturally engage, from control of entry all the way to make-work? I think we would also condemn the refusal to install or handle outside products, "hot cargo," and the variety of other means by which unions have a veto power on the channels of trade and commerce. Why not as a beginning forbid all such practices, with penalties severe enough to make the prohibition stick?

Passing on to other matters, there seems to me to be a vital distinction to be made between "collective bargaining" as such and the various devices and immunities whereby unions actually exercise vastly greater economic powers than are implied in the phrase. It is indeed amazing how much is now covered by this global and "good" phrase, "collective bargaining," in the minds not only of the general public, but apparently also of professional economists. Thus if a union in a manufacturing enterprise makes a deal with the teamsters to cut off all transportation service to and from their employer's plant, thus facing him with economic strangulation if he does not come through, they are merely "bargaining" with him—collectively, of course. On the other hand, if a physically strong customer seized a shopkeeper and began to twist his arm, I think he would not ordinarily be considered as bargaining with him at all. Should we not speak less of collective bargaining and freedom to associate and ask the simple and direct question of how much power and what kinds of power labor unions should be permitted to have and to use against employers, against other unions and other laborers, and, most important of all, against the general public, which, as we seem often to forget, pays the bill in the end?

Unfortunately time is lacking to develop here in detail the full array of power accretions which unions have come to enjoy. The point is that most of them are of such nature that they could, if necessary in the public interest, easily be prohibited or subjected to regulation. Union power can be reduced in any desired degree without sacrificing in the slightest the right of laborers to bargain collectively. And if we believe, as I do, with Professor Hildebrand, that unions have "contributed to price inflation through a continuing wage-push," some diminution in this inflationary pressure would be a valuable by-product of merely treating laborers like other citizens.

ADMINISTERED PRICES RECONSIDERED

ADMINISTERED PRICES AND THE INFLATIONARY PROCESS[1]

By GARDNER ACKLEY
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I

The past two or three years have seen a notable revival of interest in the concept of "administered prices" and of controversy about their responsibility for movements of the general price level. It seems to me that, in order to understand the important role of administered prices in inflation, we need to take a fairly intensive look at our theories of the inflationary process. Because of time limitations, I shall concentrate my analysis on theories of demand inflation. But I shall contend that when we recognize the widespread prevalence of administered prices and incorporate this kind of pricing into the theory of demand inflation, the distinction between demand and cost inflations loses most of its relevance.

The usual demand inflation analysis assumes, I think, that prices are market-determined rather than administered. Or, if prices are administered, it assumes that this fact makes no real difference—that sellers' discretion sets prices at the levels at which the market would have set them.

How should we expect market-determined prices to behave in a demand inflation? In demand inflation, output of most industries is, by definition, pressing against a capacity limit. Demand has increased, but supply is unable to do so, or can increase only in the face of sharply rising costs. We can imagine, and perhaps sometimes encounter, situations in which the limit to output in each industry, and therefore the limit to total output, is due to shortages of plant capacity. But in most Western economies—and certainly in the American economy in most periods—the limit to aggregate output is set primarily by a shortage

[1] This paper grows out of and is related to my earlier paper, "A Third Approach to the Analysis and Control of Inflation," in *The Relationship of Prices to Economic Stability and Growth*, Compendium of Papers Submitted by Panelists Appearing before the Joint Economic Committee, Mar. 31, 1958, pp. 619-636. The reader is referred to that paper for a fuller exposition of some parts of my argument here. The formal model of the inflationary process which most clearly corresponds with my analysis is that of J. Duesenberry, "The Mechanics of Inflation," *Rev. Econ. Statis.*, 1950. The model of F. Holzman, *idem.*, lacks any theory of demand, but is otherwise somewhat similar. An analysis which reaches conclusions strikingly similar to mine is that of Harold G. Moulton, *Can Inflation be Controlled?* (Anderson Kramer Assoc., 1958).

of labor. (This is what gives relevance to the concept of full employment.) Presumably, in most industries and firms, more output would be easily forthcoming, even in the full employment situation, if only more workers could be hired and more materials and parts could be purchased. And, indeed, most individual plants and industries are able to hire more labor and buy more materials; but only by taking them away from another firm or industry, reducing output elsewhere. Only in agriculture and some mining industries—and far from universally there—does the limit to over-all output (in the form of a sharply rising cost curve) come from a shortage of the fixed factor—in this case, land.[2]

In our model of demand inflation, then, buyers of final output are attempting to procure a larger total supply than can be produced. As a result, prices are bid up. To be sure, wages and other cost-prices may promptly rise, too; but it is important that the causal sequence is this: prices are bid up, costs follow. If the causal sequence is reversed—if costs rise, and therefore prices rise—we have the case of cost inflation.

Most demand inflation theories describe the price level—although continuously rising—as always being at the point at which markets for goods are cleared.[3] That is, goods prices are in (short-run) equilibrium throughout the inflationary process.[4]

Now, it is the nature of administered prices that they are not necessarily always at clear-the-market levels. Administered prices are, in fact, to be contrasted to market-determined prices, which, by definition, are always at clear-the-market levels. Administered prices are set by

[2] For the sake of completeness, we should add that demand inflation might arise in situations of less-than-capacity production; that is, even with idle facilities and labor. There is, without doubt, some physical limit to the rate at which output can be increased, even when there are no genuine shortages. If the rate of increase of demand should be extremely rapid, exceeding the rate at which output can expand toward its limit, prices might in this case also be bid up.

[3] An exception is found in the work of Bent Hansen, *A Study in the Theory of Inflation* (Allen and Unwin, 1951), who makes the rate of price change a function of the extent of excess demand.

[4] Consider, for example, Wicksell's description of the inflationary process. An excess of investment over saving—that is, an excess of consumption plus investment demand over total full-employment output—arises from an artificially low interest rate. Goods prices are bid up to ration the short supply. There exists a price level which can and will clear the market because income payments follow, in time, the rise of prices. Wicksell understood and clearly stated the macroeconomic truism that the aggregate of money income derives from and is (on simple assumptions) equal to the aggregate sale price of output. But there is a lag. Prices rise ahead of incomes. Thus goods markets are cleared at any given time, but they cannot remain cleared at the price level of that time because the level of income payments which corresponds to it will, when received, generate a higher level of money and real demand, which will require a still higher price level to keep the goods market cleared.

Other theories, less aggregative than Wicksell's have also assumed a goods market constantly cleared by rising prices, not merely because (or not even because) of a lag of income payments, but because rising prices are assumed to redistribute incomes against sectors with higher spending propensities. But such a redistribution can be maintained only while prices are rising. The victims of inflation can be squeezed out of the market only temporarily. In different models the spending so squeezed out may be labor's consumption or government's purchases or even investment (out of profits).

sellers' discretion, according to some rule or judgment. This rule or judgment might have either the object or the result that the prices which emerge will, in fact, clear their markets. But the rules followed by price administrators may be quite different, and I think usually are.

Suppose that the general rule followed in setting prices is to apply some pre-established markup or margin to unit direct costs. In many cases (e.g., at retail), the markup is applied only to materials costs, because there is little or no direct labor cost. I, myself, think that this is the typical method. In any case, assume for the present that it is. It then follows that, even in face of an excess demand for goods at present prices, administered prices will rise only if and when and by how much direct costs increase: either the prices of the goods that sellers buy, or the wages paid to workers, or both.

Because the shortages which prevent expansion of output are typically not applicable to individual firms or industries but only to aggregate output, most firms or industries will be attempting to buy more materials and to hire more labor than they are presently using. Now if the materials of which sellers are trying to buy extra quantities are also priced by our administrative rule, their prices will not rise either unless their costs rise. This means that the excess demand for materials is passed backward through a chain of administered prices until it meets one of the markets where excess demand cannot exist because price rises to eliminate it. If there were no such markets—if all prices were administered on the basis of markup over direct cost—then excess demand might exist in all markets, yet without effect on the price level. In fact, however, there are a number of basic raw materials whose prices are demand-determined, although they do not include some of the most significant ones; e.g., steel, aluminum. Most importantly, excess demand for most food products is quickly passed backward to a market-determined price for an agricultural commodity in inelastic supply.

Any consequent rise in the market-determined raw materials or raw food prices can and does then become the basis, through the usual markup rules, for advancing the prices of the goods using these materials: this price rise proceeds up the chain to affect prices of final goods, including retail food and consumer goods prices. Thus we might have the result that, while demand inflation pressures do not directly raise prices which are administered by a markup rule, the effect appears to be much the same, at least to the extent that the pressures focus back on markets where prices do respond to excess demand.

This conclusion is, however, significantly modified when we take account of two salient characteristics of the markets for the raw materials and agricultural products, the prices of which are demand-determined. One is that these markets involve, usually, highly storable

commodities, where total stocks may be large relative to annual consumption. Second, the adjustment of production tends to be very slow and to move in longer cycles often quite independent of current market conditions. Thus a rise in current demand may have very little effect on price or very great effect on price depending on whether current world production (many of these commodities have world-wide markets) is in an ascending or descending phase, and on the speculative expectations of buyers and sellers.

When we describe these prices as adjusting to clear the market, we do *not, in most cases, mean that they adjust to equalize current* consumption *to current production but rather that they adjust to* equate current consumption plus inventory-building to production plus inventory release. Speculative price expectations may well play, in the short run, a considerably larger role than the elasticity of supply from new production and elasticity of demand derived from final consumption.

Consider, for example, the behavior of raw materials and raw food prices during the period of the Korean war, which is the most recent period that almost all economists have been able to agree to describe as a case of demand inflation.

Rises of 100 to 300 per cent between June, 1950, and January, 1951, in the prices of wool, rubber, tin, jute, steel scrap, wastepaper, and the smaller, but very significant, rises in the prices of livestock, cotton, soybeans, and other domestic farm products were largely independent of current aggregate demand and supply, except as aggregate demand is interpreted to include speculative inventory-building, based mainly on fears of future physical shortages, particularly, of course, the feared cutting-off of imports in case of general war. We can appropriately describe what happened to materials prices as almost completely the result of speculation rather than the predictable result (based on demand and supply elasticities) of an excess of current demand (i.e., real consumption) over supply (i.e., production). But to users of these commodities the rises in price became rises in direct costs, which were promptly passed along in higher selling prices for their own products, to an extent roughly proportional to their weight in direct costs.

Thus, with respect to the materials element in direct costs, we conclude that to the extent that materials are priced by a direct cost plus markup rule, excess demand will not raise either costs or prices. For a relatively small number of industrial raw materials, and for most raw foods, excess demand may bid up prices (and therefore costs for users of these commodities), but to an extent that often cannot be predicted by any calculation of the extent of the current excess of demand.

We turn now to the element of direct cost which is in the aggregate

(washing out intermediate transactions) far more important; namely, labor cost.

An excess demand for final goods creates an excess demand not only for materials but also for labor. If the money wage rate were a market-determined price, the result would be the same as we have suggested for some materials: wages would be bid up, raising costs, and leading to a marking up of prices. But the money wage is, of all prices, one of the most clearly administered. Money wage rates do not fall appreciably when an excess supply of labor exists; we know that they often rise even when there is indisputable excess supply. About the most that can be said of them is that they probably tend to rise a little faster when there is an excess demand for labor than when there is not. Even this needs to be qualified. Money wage rates do appear to rise somewhat faster during periods characterized by labor shortage than in other periods; but a large part of this can be explained by the administrative rules that help to determine wage rates; namely, the strong tendency for wages, either by automatic formula or otherwise, to follow the cost of living. To the extent that administered pricing of goods prevents or delays the rise in goods prices, and thus in the cost of living, the rise in wage rates is likewise reduced or delayed. However, since food prices have a heavy weight in living costs, a general excess demand, operating on the market-determined prices of raw foods, at a stage not far removed from the retail level, calls forth administered increases in wage rates which become generalized through the entire price structure by the operation of administered-price formulas for goods. This is clearly one of the strategic channels through which a demand inflation operates.

However, the cost-of-living adjustment of wage rates is reasonably current only for those workers whose employment contracts call for automatic quarterly adjustment or whose contracts are currently expiring. The fact that most employment contracts, once made, determine labor costs for a period of one or more years ahead, has an overwhelming importance in determining the speed of inflation and the whole character of the inflationary process.[5] This is true even though individual settlements, each governing only a fraction of the labor force, are made at dates scattered evenly throughout the calendar.

[5] We all know, of course, of instances in which labor shortages, actual or prospective, have led to revision of wage contracts prior to their regular date of expiration. We recall, for example, that in 1950, shortly after the invasion of South Korea, Ford and Chrysler voluntarily (or at least willingly) set aside unexpired labor contracts to grant wage increases matching those agreed to, shortly before Korea, by General Motors. However, revision of existing wage contracts prior to their expiration is probably rather rare, at least in the U.S. In Britain and some Continental economies there has been some evidence of "slippage" in wage bargains during periods of labor shortage—an apparent tendency for rates to exceed those specified in existing contracts. See the *First Report* of the Council on Prices, Productivity, and Incomes ("Cohen Committee," London, 1958), p. 25.

Of course, when contracts do expire, an upward adjustment of rates not only can take account of past (or even some prospective further) increases in the cost of living, but can also reflect the presence of labor shortages and competitive employer bidding. Even so, it would be a travesty to characterize the wage rates set in new contracts as market-determined, clear-the-market prices, even for the groups of workers covered. For one thing, they are set prospectively, for a period of one or more years in advance, concerning which only guesses can be made as to what wage rates might clear the market. In addition, employers know that wage increases are practically irreversible; only under extreme circumstances would they contemplate rates which might supply the labor they may need to meet a temporary bulge in demand. Still, whether our interpretation runs in terms of employer bidding or increased union power, there remains some tendency for rates to increase somewhat faster (relative to the cost of living) in times of labor shortage than otherwise.

Even this limited conclusion finds little support in the Korean war experience. The rise of average hourly earnings, exclusive of overtime, in manufacturing during the inflationary spurt of 1950-51 was actually distinctly less than the concurrent rise of the Consumers Price Index or than the rise in the Consumers Price Index lagged by six months or any *other reasonable period.*[6] *In this particular period of demand inflation,* I am unable to conclude that wage rates were bid up by employer excess demand; rather, their rise hardly even reflected the inflation, in accordance with an almost universally accepted administrative rule of wage-setting.

Thus our analysis suggests that a general excess demand for goods raises administered prices: when and to the extent that an excess demand for labor causes wage rates to rise faster than they otherwise would; when, and to the largely unpredictable extent, that increased market-determined agricultural prices raise the cost of living and thus wage rates; when, and to the largely unpredictable extent, that market-

[6] The data are as follows:

	Average Hourly Earnings, Excluding Overtime, in Manufacturing (Cents per Hour)	Consumers Price Index (1935–39) = 100
January 1950	1.418	168.2
June 1950	1.453	170.2
January 1951	1.497	181.5
June 1951	1.540	185.2

The rise in hourly earnings thus was 3 per cent between June, 1950, and Jan., 1951; 6 per cent between June, 1950, and June, 1951; 5.6 per cent between Jan., 1950, and Jan., 1951. The rise in prices was 6.6 per cent between June, 1950, and Jan., 1951; 8.8 per cent between June, 1950, and June, 1951; 8 per cent between Jan., 1950, and Jan., 1951.

determined prices for a few key raw materials are bid up. Of course, to the extent that these three forces combine to raise administered prices, the cost of living will be further affected, leading to further wage increases, further marking up of goods prices, and so on. The increased money incomes associated with inflation may also tend to cause those prices which are market-determined to rise further, as higher money prices may be needed to keep these markets cleared.

One important consequence of this view is that the speed and extent of a demand inflation are likely to be very much less if many prices are administered than if all prices were market-determined. If all prices and wages adjusted quickly to clear-the-market levels, a modest degree of excess demand would produce a price level explosion, instead of the relatively smooth advances that we observe in all except hyperinflations.

A further consequence is that unless the several reactions are extremely rapid, the process may continue for some considerable period after the original source of excess demand had been eliminated; and, further, that the movement has large elements of irreversibility, since money wage increases, once granted, will tend to support a generally higher level for the market-determined prices. Of course, if an excess demand for raw materials is replaced by an excess supply, their prices will fall; but they are not likely to fall as far as they had previously risen.

II

All of the above argument has rested on the assumption that the typical price-changing process invloves the application of predetermined markups to direct costs. Now I certainly do not wish to argue that these markups are set by seller's whim or that they never change. In the determination of the individual seller and product markups, demand and competitive conditions play a major role, as Heflebower has so effectively argued.[7] But these demand and competitive factors operate primarily on the internal structure of markups rather than on their average level; and they operate slowly. At any given time, some markups may be gradually increasing, other narrowing; but this process of individual readjustment is, in my argument, largely independent of aggregate demand in the economy and of whether the price level as a whole is rising or falling.

I say "largely independent" because I presume some tendency for the average level of sellers' markups to rise and fall with aggregate demand. It is for this reason, as well as others already mentioned, that inflation is likely to be more rapid and more persistent the higher the

[7] See his "Full Costs, Cost Changes, and Prices," in *Business Concentration and Price Policy*, A Conference of the Universities-National Bureau Committee for Economic Research (Princeton Univ. Press, 1955), pp. 361-392.

level of aggregate demand. In particular, when demand becomes extremely weak, as in a major depression, markups in some fields may be significantly cut (although Ruggles' data[8] do not suggest that this happened on any extensive scale in 1929-32). But such cuts are likely to be quickly restored with only a reasonable recovery of effective demand.

And while I suspect that the average level of markups may be advanced under highly inflationary conditions, I think that this comes primarily through some tendency to anticipate pending cost increases rather than through a change in the markups applied to such cost increases.

To get the result required by the standard demand inflation analysis, we would have to assume markups to be so freely and flexibly responsive to demand that the concept of pricing by markup would become meaningless. I am convinced that it is not.[9]

Once again, we can test our conclusion against the experience of the Korean war inflation. Was there any general advance during this period in the markups applied by sellers in markets other than the relatively few where prices are market-determined? This is ordinarily a difficult question to answer, even on a highly aggregative level. This time, however, we have what were almost the conditions of a laboratory experiment, although, unfortunately, the data resulting from this experiment were never adequately processed and are now, I suppose, forever lost. But enough was salvaged to permit some rather definite indications.

On Januray 26, 1951, the Office of Price Stabilization issued a general freeze of almost all prices other than of agricultural products.[10] This freeze was, through an incredible series of blunders, widely advertised

[8] "The Nature of Price Flexibility and the Determinants of Relative Price Changes in the Economy," in *Business Concentration and Price Policy*, pp. 441-495.

[9] I have not tried here to explain why sellers generally do not let their markups expand in a period of excess demand, nor do I have any pat explanation to suggest for this behavior. I suspect that it frequently reflects not mere inertia but rather a concentration of attention on long-run target rates of return and long-run market shares, over a period which will include both good times and bad. Markups over direct costs may be designed to earn—on anticipated volume over the period—a return which is considered satisfactory but not so high as to induce excessive new entry. A rise or fall of volume will, of course, greatly increase or decrease the short-run profit margin over all costs including overhead. But the markup may not be revised unless the change in current demand is seen as altering the longer term volume prospect for the firm or industry. Paradoxically, a current increase in demand which revises upward the longer term volume prospect might lead to a reduction in the markup necessary to produce the desired rate of return. Changing competitive situations affecting the firm's prospective market share, or changes in the firm's targets as to market shares may also lead to revisions of its markup policy. But I see these as affecting primarily the internal structure of markups, and canceling out for the whole economy. With respect to these issues, see the extremely interesting article by Robert F. Lanzillotti, "Pricing Objectives in Large Companies," *A. E. R.*, Dec., 1958, pp. 921-940.

[10] General Ceiling Price Regulation. A detailed discussion of this regulation, its background and its problems, is contained in my study, "Selected Problems of Price Control Strategy, 1950-52" (typewritten, pp. xiv + 630, made for and deposited with the Office of Defense Mobilization, Washington, D.C., Aug., 1953).

for weeks prior to its issuance and was almost a "sure thing" for days before it was imposed. Most sellers' memories of earlier price controls were sufficiently green that all the talk about a freeze practically invited them to raise not only their prices but their margins. It was the general conviction on the part of the price controllers that most if not the overwhelming majority of prices had been advanced during the previous six months by more than the relevant material and labor costs had risen; and that if they had not been so advanced previous to these last few weeks, they had certainly then been invited to be raised to cover all past and some prospective cost increases.

To be sure, it was anticipated that there would be thousands of individual hardship cases owing to the very rapid pace of the inflation and the inevitable lag in the registration of some cost increases. There were also some 260 large firms which had been specifically requested in December not to raise prices except after seven days' notice to the price control agency; and it was known that a few of them had observed the request in a way which created a genuine inequity when their actual selling prices, along with others, were suddenly frozen. A few firms may even have paid some attention to some suggested "voluntary standards" issued in mid-December, which asked firms making reasonable over-all profits not to advance prices at all except of those products being sold at a loss. The announcement of these standards came only one month prior to the price freeze and could at most have applied to one (of seven) month's cost increases. It is my firm conviction that it had no discernible effect on the price level.

Prices frozen at levels which exceeded pre-Korean prices by less than the increases in relevant direct costs were, however, assumed to be in a small minority; for the overwhelming majority of products and sellers, the price controllers were confident that selling prices had advanced by more than direct costs.

The screams of anguish after the freeze were numerous; and the cases of those who had observed the seven-day notice request were particularly embarrassing to the agency. In the case of concerted, and perhaps justified, criticisms that the agency had waited too long to act—that prices were already too high—there was great reluctance to allow further price increases for those sellers whose ceiling prices reflected less than "normal" margins over costs. After much soul-searching, the agency did, however, finally conclude that it could remedy the inequities of the freeze and, at the same time, probably reduce the general level of ceiling prices if it replaced the general freeze by permitting most sellers at retail to determine maximum prices on the basis of normal markups over invoice cost (principally through Ceiling Price Regulations 7, 14, 15, and 16) and by requiring almost all manufacturers to compute new

ceiling prices by going back to their pre-Korean prices and adding to these prices the actual increases they had sustained since Korea in their direct materials and labor costs (Ceiling Price Regulation 22 and several similar regulations).

Had the margins applied to direct costs by manufacturers and retailers advanced between June, 1950, and January, 1951, these regulations should have required extensive rollbacks of ceiling prices. In the case of manufacturers, ceilings would have been rolled back if nothing more than normal percentage margins over direct costs had been maintained, for the regulation permitted the addition of only the dollars-and-cents amounts of the cost increases.

The outcome of these regulations cannot be assessed with certainty, for many reasons, but primarily because an adequate statistical program was beyond the resources of the agency. But such evidence as there is clearly suggests that, contrary to expectations, the new ceiling prices were in most cases higher than previous ceilings. It does appear that a number of individual rollbacks were (or would have been) required. For example, in the case of cotton textiles, which approximates more closely than most manufactured goods the condition of market-determined prices, the average rollback was calculated at about 6 per cent. But for manufacturing industry generally it appears that prices had advanced during the seven-months' period by somewhat less than the dollars-and-cents advance in direct costs and that the regulation permitted an increase of perhaps 2 per cent in the level of ceiling prices.

As I have indicated, this conclusion cannot be fully verified. To some extent, there may have been loopholes in the regulation (although it was drawn very tightly, as anyone who troubles to read it can easily ascertain). Further, the calculations were made by the sellers themselves (although in the case of ceiling price increases, these calculations were subject to agency review), and deliberate or careless mistakes of calculation may have contributed to the result. Finally, as I have indicated, no adequate statistical program was undertaken to assess the results. Still, reviewing all the evidence that was and is available leads me to the confident conclusion that, during this period of demand inflation, administered prices rose by no more and perhaps by less than the rise in relevant direct costs. (The evidence concerning the effect of the manufacturers' regulations is reviewed and evaluated in my study, *op. cit.*, pages 300-388.)

III

In the above analysis I have, in effect, argued that the inflationary process is essentially an administrative one. It arises from a largely autonomous upward pressure on wage rates relative to the cost of living,

interacting with administered-price markups applied to rising wage costs, compounded again through agricultural prices, raw materials, the cost of living, wage rates, and industrial prices in endless chain. If the demands of labor and the markup practices of business cannot be harmonized through sufficient productivity increases, inflation results. High or increasing aggregate demand makes the problem worse through its probable impact on raw materials or agricultural prices, and because it will probably speed the advance of wage rates. If it should also cause an enlargement of desired seller markups, the difficulty would be further intensified. But there is no sharp dichotomy between cost inflation operating only below some magic point of full employment and demand inflation operating only beyond it. Whether aggregate demand is excessive or deficient, the problem of inflation needs to be analyzed in administrative, that is, essentially political, terms, and on the price as well as the wage side.

I believe that this approach to the analysis of inflation has significant implications for policy, some of which I have indicated elsewhere ("A Third Approach to the Analysis and Control of Inflation"). One such implication is the limited usefulness of the instruments of monetary and fiscal policy in combating inflation. Surely, these instruments should be used—and more effectively than in the past—to eliminate truly excess aggregate demand, as well as to bolster demand when it is deficient. But we probably cannot count on them for complete stabilization of the price level. Rather, successful efforts to stabilize prices must more directly affect the crucial elements which determine the inflationary process; that is, the rate of increase of wage rates relative to living costs, the rate of increase of productivity, the level of business markups, and (at times) speculative movements of raw material prices.

Since our interest here is in administered prices, let me concentrate only on the markup element, in full recognition that its significance can only be considered in relation to the other elements. It would follow from my analysis that, given the other factors, a general attempt by sellers to enlarge their markups would be inflationary—both directly, and with a high multiplier effect through the spiral of living costs, wage rates, business cost, and so on. Whether there has been any general tendency for markups to enlarge in recent years seems doubtful to me, regardless of what may be the case in some particular industries. It would also follow, of course, that a reduction of the average level of seller markups could have an important stabilizing influence on prices.

But why should business take narrower markups merely to offset the pressure on the price level of greedy wage claims by unions? I do not know. But equally legitimate is the question: How do we know that the present level of markups is correct simply because it may not have been

increasing? If prices were market-determined, in a universal regime of pure and perfect competition, we would not have any trouble answering this question. But if prices as well as wages are set by an essentially political process, economists should have guilty consciences about casually concluding that only labor's excessive wage claims can be responsible for creeping inflation, when these claims can be judged excessive only because they are inconsistent, at stable prices, with the also politically-determined markup claims of business.

Of course, administered pricing is not coterminous with monopoly. Not all or even most administered prices yield excessive profits. (Indeed, our textbook monopolist does not administer his prices!) But in trying to understand creeping inflation it is not irrelevant to inquire whether the prevailing markups employed in some industries may not protect either excessive—i.e., functionless—profits or excessive costs. For this reason, I can only welcome the renewed attention now being paid to the phenomenon of administered prices in industry and the distributive trades.

ADMINISTERED PRICES: A PHENOMENON IN SEARCH OF A THEORY

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In trying to find a conceptual rationale for the very real but intellectually homeless phenomenon of administered prices, I wish at the outset to delineate the specific objectives of this paper, which are to describe the behavior of administered prices in oligopolistic industries and to suggest logical explanations for their behavior. In order to expedite the discussion and minimize possible misunderstandings, certain underlying assumptions should be set forth at the outset. As is true of many of the other propositions set forth in this paper, they may represent oversimplifications, but without oversimplifications little progress could be made toward treating this highly complex and controversial subject matter within the established time limits. The assumptions are as follows:

1. That, broadly speaking, there are two types of industries: those in which output is widely diffused among many producers (or "atomistic")[1] and those in which it is concentrated among few producers (or oligopolistic).

2. That classical theory provides both an accurate description and a logical explanation of the behavior of the former, and that indeed the resemblance between the actual behavior of such industries and the behavior expected on theoretical grounds is usually little short of remarkable.

3. That since a number of its major assumptions are not present, classical theory provides no description of nor rationale for the behavior of oligopolistic industries, except of course for the explanations provided more recently by theories of imperfect competition.

4. That the administered prices with which I am concerned here are those in industries in which the adjustment to a decline in demand takes the form of a decrease in production rather than in price. Usually, these industries tend to be oligopolistic in structure. Although Gardiner Means's definition of administered prices as those which are "set and held constant for a period of time" embraces other types of prices as well (e.g., the prices of Macy's department store), they present less of a cause of concern since, with a decline in demand, the market is cleared through a reduction in price.

[1] The preference for "atomistic" over its synonyms, "nonoligopolistic," "polypolistic," or "market-determined," is purely personal.

The behavior of administered prices in oligopolistic industries, and the standards used for their determination, will tend to vary with the level of general economic activity. Hence, the following discussion will be broken down into three stages: seriously depressed periods, highly prosperous periods, and periods of moderate underutilization of capacity.

Seriously Depressed Periods

In periods of substantial underutilization of capacity, prices in oligopolistic industries tend to remain relatively inflexible. While hardly novel, it may be useful to recount briefly the empirical bases and theoretical considerations underlying this proposition.

It is supported principally by three bodies of evidence: (1) a statistical analysis by Gardiner Means of the relationship between concentration and price rigidity during the early thirties; (2) a series of examples for the same period, also by Means, of products within the same commodity groups (e.g., durable goods, raw materials, etc.), with the products of high concentration tending to show rigidity and those of low concentration flexibility;[2] and (3) a comparison for a large number of identical products of their price behavior in two depressions, 1890-97 and 1929-33, which showed that in the industries that remained atomistic, prices were flexible in both periods, whereas in those that became concentrated during the interval the price behavior tended to change from flexibility to rigidity.[3]

Without attempting to go into all of the technical arguments involved, it may suffice here to note that Means's study was criticized principally on the grounds that the price data which he used, the BLS price series, do not reflect hidden discounts and concessions. But this criticism has force only if such discounts become relatively more important for products of high rather than for products of low concentration. No such showing has ever been made. Moreover, those who criticize Means on the deficiencies of his price series sometimes overlook his efforts to eliminate products for which the price data appeared to be inadequate. Contrary findings were presented in studies by Willard Thorp and Alfred C. Neal, which, however, have technical shortcomings of their own and constitute something less than a definitive refutation.[4]

[2] *The Structure of the American Economy* (National Resources Committee), Part 1, 1939, prepared under the direction of Gardiner C. Means.

[3] John M. Blair, "Economic Concentration and Depression Price Rigidity," A.E.A. *Papers and Proceedings*, May, 1955.

[4] Temporary National Economic Committee, Monograph No. 27, *The Structure of Industry* (by Willard L. Thorp and Walter F. Crowder, 1941); Alfred C. Neal, *Industrial Concentration and Price Inflexibility* (American Council on Public Affairs, 1942). For a critique of these studies, see John M. Blair, "Means, Thorp and Neal on Price Inflexibility,"

On the type of price behavior to be expected of oligopolists during severe downswings, the empirical findings of Means nicely dovetail into modern theories of imperfect competition. Indeed, to reject the empirical evidence of Means while accepting the theoretical arguments of Chamberlin and Robinson would present a logical inconsistency which even the most adroit theoreticians might have some difficulty in overcoming. The fundamental reason why prices of concentrated products may be expected to remain relatively inflexible during a downswing has been stated with admirable clarity by Chamberlin:

> If each seeks his maximum profit rationally and intelligently, he will realize that when there are only two or a few sellers his own move has a considerable effect upon his competitors, and that this makes it idle to suppose that they will accept without retaliation the losses he forces upon them. Since the result of a cut by any one is inevitably to decrease his own profits, no one will cut, and although the sellers are independent, the equilibrium result is the same as though there were a monopolistic agreement between them.[8]

It is important to note that this line of reasoning explains an oligopolist's behavior only when what he is considering is a price reduction. Rarely do oligopolists contemplate price reductions during periods of full capacity utilization. And for reasons developed in this paper it is submitted that even during periods of moderate underutilization the direction of the contemplated price change is rarely downward.

There is, incidentally, another and often overlooked reason why oligopolists do not reduce price—a reason which is applicable to all periods. This is the assumption that the demand for the industry's product is not sufficiently elastic to warrant a lower price. Not only is this an article of faith to which most businessmen seem fervently dedicated, but it is also implicitly assumed in theories of imperfect competition, since if an oligopolist assumed total demand to be sufficiently elastic, he might make a price cut, even knowing that it would be immediately matched, in the expectation that the increase in revenues arising from his share of the increase in the product's total sales would more than offset the decrease in his revenues resulting from the lower price.

Highly Prosperous Periods

In periods of full, or virtually full, utilization of capacity, prices in oligopolistic industries will tend to rise, although the increase will be less than the increase of an atomistic industry with similar demand and cost circumstances. That in periods of high demand, prices of

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Rev. of Econ. and Statis., Nov., 1956. For a criticism of Blair by Jules Backman, together with rejoinder, see *Rev. of Econ. and Statis.*, Nov., 1958.

[8] Edward H. Chamberlin, *The Theory of Monopolistic Competition* (5th ed.; Harvard Univ. Press, 1947), p. 48.

atomistic industries do in fact tend to rise more rapidly than prices in oligopolistic industries has frequently been noted and need not be documented here.[6]

A number of reasons have been cited for this behavior. Where there is a tradition of leadership, oligopolists may await action by the dominant concern. Where there is no such tradition, uncertainty by each of the oligopolists as to the probable extent of the upward adjustment by the others may act as a deterrent. There is in many oligopolistic industries a practice, to which buyers have become accustomed, of making price changes only at infrequent intervals. On occasion, it may be deemed wise by the management of very large enterprises, in the interest of good public relations, to carefully weigh or even condition the public reaction to a price increase. For these and similar reasons, it may be presumed that there will generally be a lag between the increase in the demand and the price adjustment thereto made by the oligopolists. Because of this time lag, there will always be (except for anticipatory price increases) what John K. Galbraith has characterized as "unliquidated monopoly gains." Galbraith states:

> With inflation, the demand curves of the firm and industry are moving persistently to the right. Under these circumstances there will normally be an incomplete adaptation of oligopoly prices. Prices will not be at profit-maximizing levels in any given situation, for the situation is continually changing while the adaptation is by deliberate and discrete steps. This means that at any given time there will ordinarily be a quantum of what may be called unliquidated monopoly gains in the inflationary context. The shift in demand calls for a price increase for maximization; since the adaptation is currently incomplete, prices can at any time be raised and profits thereby enhanced. ("Market Structure and Stabilization Policy," *Review of Economics and Statistics*, May, 1957, page 127.)

Galbraith's thesis appears to be unassailable as long as it is assumed that demand continues to rise, since it is the increase in demand that gives rise to the time lag which in turn produces the unliquidated monopoly gains. But what of the case where demand is not rising but has stabilized at a level which, if profit were to be maximized in the short run, would support an increase in price? Although Galbraith is not explicit on this point, there are at least two reasons for assuming that the oligopolists would not raise their prices to the level of full short-run profit maximization. In the first place, oligopolists cannot be presumed to be oblivious of the attraction which a full monopoly price has for newcomers or smaller firms with expansionistic ambitions. While motivations are always hard to establish, it is difficult to review the action by U.S. Steel during the "grey market" year of 1948 of reducing the price of finished steel while increasing the price of semifinished steel without concurring in the view of the Joint Economic Committee that concern over the vigorous growth of the semi-

[6] Cf. Edward S. Mason, *Economic Concentration and the Monopoly Problem* (Harvard Univ. Press, 1957), p. 170.

integrated producers was at least one of the impelling considerations.[7]

In addition, the pricing policies of oligopolistic price leaders are frequently directed, as will be shown later, toward achieving a long-range "target" profit rate at a specified level of production; this level of production is usually well below capacity. Operations at full capacity will in such cases yield a profit rate substantially above the target, which itself usually represents a highly satisfactory return by any standard. If profits are further enhanced by a price increase that maximizes returns in the short run, they may become a source of positive embarrassment to the company in its relationships with customers, labor, and the Congress.

Whether, in the future, demand will require full capacity operations for any sustained period is a matter of conjecture. In the past, aside from major wars, demand has been sufficiently high to support full capacity operations only during years following the end of such conflicts when pent-up demands could finally be released. But since capital formation characteristically outstrips consumer demand, periods of full capacity operations sooner or later come to an end. And it is when this occurs that the most marked divergence between the price behavior of atomistic and oligopolistic industries takes place.

Periods of Moderate Underutilization of Capacity

In periods of moderate underutilization of capacity, prices in oligopolistic industries will not decline, will not remain inflexible, but will tend to rise.[8]

Although not as yet established empirically as a general proposition, this type of price behavior has become quite prominent during recent years and can be illustrated by the performance of the steel and automobile industries. The following chart shows for the period 1947 to mid-1958, by quarterly intervals, the price and production trends of cold-rolled sheets and hot-rolled bars, both of which rank among the top four steel products in terms of total shipments. The consumption of cold-rolled sheets is highly centralized in two industries (automobiles and appliances); that of hot-rolled bars is widely diffused among many industries. Despite these differences in the nature of their demand, both products—and indeed all steel products—have been characterized by virtually the same type of "stair-step" price behavior. Particularly to be noted are the price increases of

[7] "December 1949 Steel Price Increases," Report of the Joint Committee on the Economic Report, Senate Report No. 1373, Mar., 1950, 81st Cong., 2nd Sess.

[8] Unless otherwise noted the examples used to illustrate the propositions advanced in this part of the paper are drawn from the hearings and reports on "Administered Prices" of the Subcommittee on Antitrust and Monopoly, Senate Judiciary Committee, 85th Cong., 1957-58.

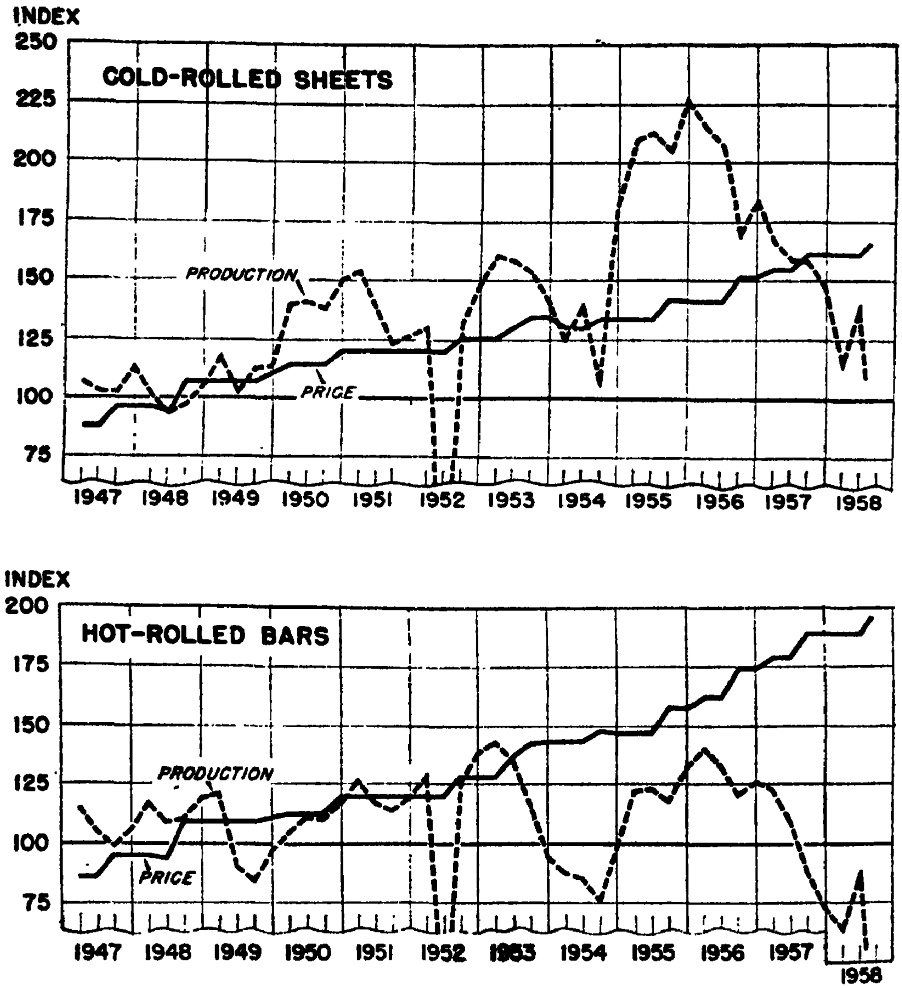
CHART I

COLD-ROLLED SHEETS AND HOT-ROLLED BARS

TRENDS IN PRICE AND PRODUCTION, 1947-58

(1947-49 = 100)

(Month at End of Quarter)



SOURCES: Production: U.S. Department of Commerce (based on American Iron and Steel Institute). Price: U.S. Bureau of Labor Statistics.

1949, 1953-54, and mid-1958, each of which was accompanied by declining production.

In the case of the automobile industry, the price behavior has been much the same. Between 1955 and 1956, total new car registrations

fell 17 per cent while price, depending on the index used, rose 4-5 per cent; similarly between 1957 and 1958 new car registrations fell by more than 20 per cent while price again rose about 4 per cent.

What is the explanation for this singular type of price behavior? Certainly, it is a far cry from the price decline which would be expected in the classical theory of a competitive market. Nor can a meaningful answer be found in a generalized concept of profit maximization. As Kaplan, Dirlam, and Lanzillotti point out in the recently published Brookings Institution study of the price policies of large enterprises:

> An obvious alternative . . . would be to take profit maximization as the overriding goal of corporate pricing and follow the familiar view that other long-run objectives and their variations from firm to firm simply reflect the fact that different companies, in dissimilar industries, cannot use identical means to achieve the same ultimate objective. But, in order to be operationally useful, the concept of profit maximization needs to be so broadened, in the context of company practices, that it becomes more a concept of optimum satisfaction. This is largely subjective.[9]

Neither does imperfect competition theory provide, in itself, an answer to the question. The very same considerations which are expected to dissuade oligopolists from making reductions in price would also operate to prevent them from instituting increases. Each oligopolist could be expected to be apprehensive that any price increase which he might make would not be matched by the other oligopolists and, accordingly, would abstain from raising his price. And even if one of the oligopolists did raise his price, there is no theoretical reason why the others should also find it necessary to raise their prices—particularly to the same identical level.

Since the explanation is not to be found in the body of economic theory as it now exists, does that mean that it is beyond discernment by economists? Such would appear to be the position of Mason who holds that in the development of a new capitalist "apologetic" (in which the behavior of oligopolists would necessarily be a key element) "economics will be found to have little to contribute . . ." and "the psychologists, the sociologists, and possibly, the political scientists will be the main contributors."[10]

There is another point of view, to which I happen to subscribe; namely, that the behavior of oligopolists reflects a complex of internally-logical standards and reasonably consistent behavior patterns which can be adduced by observation and which, moreover, it is the proper function of economists to adduce. Here attention will be di-

[9] A. D. H. Kaplan, Joel B. Dirlam, Robert F. Lanzillotti, *Pricing in Big Business* (Brookings Institution, 1958), pp. 128-129.

[10] Edward S. Mason, "The Apologetics of 'Managerialism,'" *J. of Bus. of the Univ. of Chicago*, Jan., 1958.

rected toward three factors which might provide some explanation for the behavior of oligopolists in raising prices at a time of substantial underutilization of capacity—the so-called "cost-push," the shift from price to nonprice competition and the inflationary influence of target pricing.

Cost-Push Inflation. By far the most prominent, and in many quarters the only, explanation given for the phenomenon in question is the upward pressure on prices exerted by rising costs, particularly labor costs. While in a period of depressed demand, rising costs cannot, in theory, be regarded as a sufficient explanation for price increases in the short run; they are relevant to anything beyond the short run and certainly enter into oligopolists' pricing policies at all times.

The age in which we live (and this is likely to be true for the indefinite future) is one of organizations, among which are organizations of labor. For a number of reasons these organizations can be expected to exert continuing pressure for higher wage rates and fringe benefits. For one thing, to the extent that price increases are due to factors other than increases in wage costs, labor organizations can be expected to press for higher wage rates merely to maintain their existing share of the sales dollar. The same will be true when they are confronted, as will undoubtedly continue to be the case, with increased mechanization and a consequent reduction in unit labor requirements. Then, too, rivalry among labor leaders is one of those forms of competition which have very definitely not disappeared from the economy. The head of a labor organization can ignore superior gains obtained by a rival union head only at his own peril. Moreover, it is in the nature of organizations to press continually for their objectives. In this respect, labor organizations are no different from organizations of capital, farmers, or, indeed, teachers.

Regardless of the cause, it may be taken for granted that labor organizations, except perhaps in times of severe depression, will strive continuously for wage increases and other forms of compensation. The effect of this pressure on prices will tend to be aggravated as more and more rival oligopolists adopt the practice of negotiating jointly with the unions. An important incentive for an oligopolist to resist a wage advance is his apprehension that his rivals might be able to make a less costly bargain with the union. To the extent that this happens, the more successful bargainers would have an incentive not to join in the next price advance. But as rival firms come to bargain in concert with the union, the uncertainty tends to disappear. In arriving at the 1956 wage agreement in the steel industry, U.S. Steel, Bethlehem, and Republic negotiated jointly with the union. In auto-

mobiles, General Motors, Ford, and Chrysler made a common offer to the union in the spring of 1958 and obtained a virtually common settlement in the fall.[11]

In addition to eliminating uncertainties, the very act by rival firms in collectively negotiating a wage agreement provides a unique opportunity for a common appraisal of the effect of wage advances on costs and thus at least implicitly on price. This is not to say that the wage negotiation is used as a "handy instrument" to fix prices, although on occasion it may be so employed. But it is to suggest that each oligopolist necessarily gains knowledge of his rivals' probable reaction to a given wage increase. The range of uncertainty as to the probable price change each oligopolist may anticipate from the others is accordingly narrowed. To a price leader such knowledge should be particularly valuable in setting a price high enough to meet general approval from the other producers but not so high as to needlessly invite undercutting.

The Shift from Price to Nonprice Competition. Since, as imperfect competition theory holds, oligopolists tend to avoid competing in price with each other, such rivalry as develops among them must necessarily take the form of nonprice competition. Where products are differentiated, the costs per unit of product of nonprice competition may reach such proportions as to constitute a significant cost element. The most conspicuous example of the rise in the costs of nonprice competition is provided by the automobile industry. According to testimony before the Senate Subcommittee on Antitrust and Monopoly, the three largest automobile companies now spend in the aggregate well over 1 billion dollars a year in styling, engineering, and special tooling for their frequent model changes. When advertising costs are added, the Big Three appear to be spending at least 1.2 billion dollars a year to promote fictitious style obsolescence.

The same phenomenon is occurring in other industries, although perhaps in less spectacular form. Thus, the International Harvester Company has embarked upon a program of making annual model changes in its tractors; the presumption apparently is that no self-respecting farmer would want to be caught dead driving last year's tractor. In bread, the greatest relative increases in costs during recent years have been in advertising and promotion and in wrapping and packaging.

The consequences of nonprice competition are no longer limited to the simple fact that it is a substitute for a more desirable form of competition. In many industries it now represents a significant element of overhead costs and thus constitutes to management a good and sufficient

[11] "Industry Uniting," by Bernard D. Nossiter, *Washington Post*, Nov. 4, 1958.

reason for increasing prices when sales fall off. On the basis of a total annual cost for style obsolescence of 1.2 billion dollars, a decrease in automobile sales from 8 million to 4 million cars means an increase in such costs of $150 per car. It is perhaps this type of upward pressure

PRICING GOALS OF TEN LARGE INDUSTRIAL CORPORATIONS

Company	Principal Pricing Goal	Collateral Pricing Goal(s)	Rate of Return on Investment (after taxes) 1947–55	
			Average	Range
ALCOA	20% on investment (before taxes); higher on new products [about 10% effective rate after taxes]	a) "Promotive" policy on new products b) Price stabilization	13.8	7.8–18.7
DU PONT	Target return on investment—no specific figure given	a) Charging what traffic will bear over long run b) Maximum return for new products—"life cycle" pricing	25.9	19.6–34.1
ESSO (Standard Oil of N.J.)	"Fair-return" target—no specific figure given	a) Maintaining market share b) Price stabilization	16.0	12.0–18.9
GENERAL ELECTRIC	20% on investment (after taxes); 7% on sales (after taxes)	a) Promotive policy on new products b) Price stabilization on nationally advertised products	21.4	18.4–26.6
GENERAL FOODS	33⅓% gross margin ("⅓ to make, ⅓ to sell, and ⅓ for profit"); expectation of realizing target only on new products	a) Full line of food products and novelties b) Maintaining market share	12.2	8.9–15.7
GENERAL MOTORS	20% on investment (after taxes)	Maintaining market share	26.0	19.9–37.0
INTERNATIONAL HARVESTER	10% on investment (after taxes)	Market share: ceiling of "less than a dominant share of any market"	8.9	4.9–11.9
JOHNS-MANVILLE	Return on investment greater than last 15-year average (about 15% after taxes); higher target for new products	a) Market share not greater than 20% b) Stabilization of prices	14.9	10.7–19.6
UNION CARBIDE	Target return on investment	Promotive policy on new products; "life cycle" pricing on chemicals generally	19.2	13.5–24.3
U.S. STEEL	8% on investment (after taxes)	a) Target market share b) Stable price c) Stable margin	10.3	7.6–14.8

on prices which prompted the retiring president of the American Paper and Pulp Association to say on February 20, 1958, that "the nation's paper makers will be forced to raise prices if operations continue to lag."

The Inflationary Influence of "Target Return" Pricing. Any analysis of "target return" pricing should be prefaced with a distinction between two types of oligopolies. Those in which one of the oligopolists is dominant and the others secondary may be referred to as "asymmetrical" oligopolies; those in which none is dominant and each has about the same relative position may be termed "symmetrical."[12] The asymmetrical oligopoly in which the dominant firm is the actual or effective price leader appears to be the more prevalent type in American industry (e.g., steel, aluminum, automobiles, oil, farm machinery, electrical equipment, cans, many chemicals, etc.).

In many, if not most, asymmetrical oligopolies, the price policies of the leader are directed toward securing a target rate of return on its investment at a specified level of production, or "standard volume" as it is sometimes termed. The recently published Brookings Institution survey of pricing policies of large corporations found that "target return on investment was probably the most commonly stressed of company pricing goals." (Kaplan, Dirlam, and Lanzillotti, *op. cit.*, page 130.) In a new article based largely upon that survey Professor Lanzillotti summarizes the pricing goals of seventeen large manufacturing corporations as developed by the Brookings survey.[13] In the case of all but one or two of the oligopolists which were dominant in their industry, numbering ten in all, the "principal pricing goal" was the securing of a target return on investment. Lanzillotti's summary data for the ten manufacturing corporations are presented in the table on page 440. According to Lanzillotti, "in most cases the target was regarded as a long-run objective" and "the average of the targets mentioned was about 10 per cent to 15 per cent (*after* taxes); only one was below 10 per cent; and the highest was 20 per cent." He goes on to state:

> Firms that were conscious of shooting for a particular target return on investment in their price policies were those that sold products in a market or markets more or less protected and in which the companies were leaders in their respective industries. Alcoa, du Pont, Esso, General Electric, General Motors, International Harvester, Johns-Manville, Union Carbide, and U.S. Steel, had important segments of price policy hinge on this particular objective. In so doing, they assumed that they would have some chance of being able to reach the target return.

[12] The terms which are applied here to the structure of oligopolies are borrowed from their traditional use in differentiating the types of reactions of oligopolists to price changes. For a discussion of the latter see Fritz Machlup, *The Economics of Sellers' Competition* (Johns Hopkins Press, 1952), pp. 402–404.

[13] Robert F. Lanzillotti, "Pricing Objectives in Large Companies," *A.E.R.*, Dec., 1958. His analysis also includes three large firms engaged in distribution.

From the mere fact that the leading oligopolist prices to achieve a target rate, it does not necessarily follow of course that the other oligopolists will match his price increase. That in fact they do, and the probable reasons therefor will be discussed later in this paper. Similarly, the mere fact of target return pricing does not necessarily mean that prices will tend to move upward at a time of significant underutilization of capacity. But target pricing does lend an impetus in a number of specific ways to the making of price revisions in an upward direction.

Perhaps the clearest way in which target pricing can be seen to contribute to price increases is when management decides to raise the target. The pricing behavior of U.S. Steel during the last few years may serve as an illustration.

The Brookings survey places the target of U.S. Steel at "over the years a net return, after taxes, of around 8 per cent on investment." (Kaplan, Dirlam and Lanzillotti, *op. cit.*, page 169.) It referred, however, to a view within the corporation that such a return was inadequate: "One officer maintained . . . that, under present conditions, if earnings were limited merely to this return, replacement of plant would have to be financed with new capital, and expansion could not be financed at all except by foregoing dividends; even then there would be insufficient funds." (*Ibid.*, page 171.)

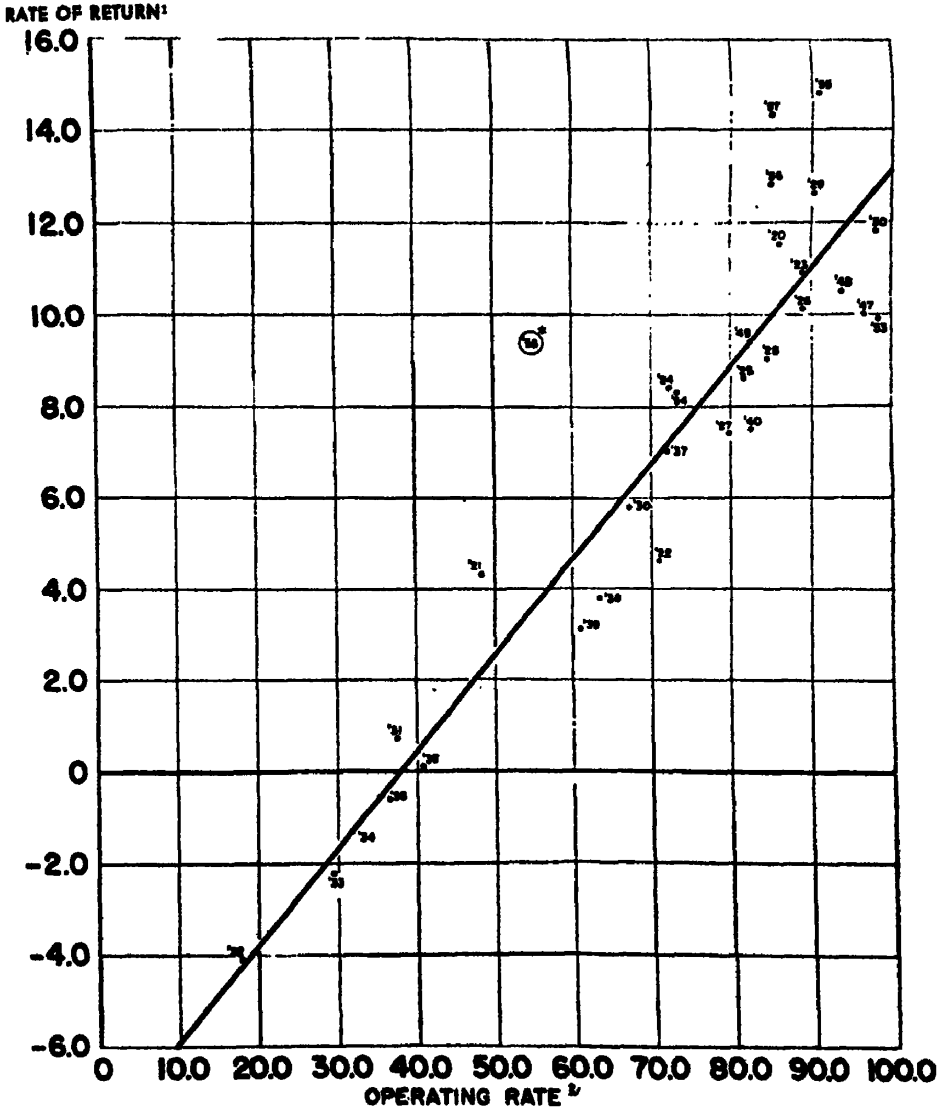
In their attempts to justify the price increase of 1957, the officials of U.S. Steel placed great emphasis on the need for higher earnings to finance plant expansion and modernization. While they were somewhat less than clear as to the reasons why consumers instead of investors must provide the funds for capital formation, an analysis of the corporation's profit rates in recent years suggests that its management has taken definite steps to ensure that consumers make their contribution.

The accompanying chart shows the relationship for U.S. Steel between its operating rate and its rate of return on net worth after taxes from 1920 to date, excluding war years. It will be observed that for the period 1920 through 1954 a close relationship existed between the operating rate and the profit rate. (For the years 1920-56, the Pearsonian coefficient of correlation was 0.94.) Beginning in 1955, however, the observations begin to rise materially above the regression line. If a freehand line were drawn through the observations for 1955-58, it would reveal that, as compared to the past relationship, the same operating rate would yield a profit rate higher by at least 4 percentage points. In 1958, for example, the operating rate was 55 per cent for the first three quarters; on the basis of the past relationship, the expected rate

CHART II

U. S. Steel Corporation

Relationship between Percent of Capacity Operated and Rate of Return on Stockholders Investment, after Taxes, 1920-58[3]



[1] Source: Federal Trade Commission.
[2] Source: U. S. Steel, Basic Facts About U. S. Steel and Financial Reports.
[3] Excludes 1941-46 and 1951-52.
* First 3 quarters 1958 (Preliminary).

of return would be around 4 per cent; the latest information indicates that it will be over 9 per cent.

There is the same inflationary effect on prices, of course, when management lowers the rate of production at which the target rate is to be achieved. Confronted with prolonged depression, General Motors in 1934 lowered the rate of production—which it refers to as its "standard volume"—from approximately 1.8 to 1.3 million units, a reduction of over 25 per cent.

A second way in which "target return" pricing contributes to price inflation concerns the attitude of management to the question of demand elasticities. In an informal discussion which Dr. Means and I were privileged to have with Sir Dennis Robertson last year, he remarked that businessmen in his experience almost invariably regard the demand for their industry's product as extremely inelastic. Certainly, this appraisal is in accord with the position taken, indeed emphasized, by representatives of large enterprises before Congressional committees and elsewhere. If the management of a dominant oligopolist believes demand for its industry to be highly inelastic and if in the past year, for whatever cause, sales have fallen, bringing the realized profit rate below the target, what course of action to ensure the attainment of the target could possibly seem more logical than an increase in price? If demand is in fact relatively inelastic, the price increase will secure its objective with no direct adverse effect on the company's sales. If, however, demand is elastic, the price increase would tend to compound the problem, since it would lead to a further decline in sales, for the correction of which an additional price increase might be regarded as the logical remedy!

The automobile industry may well be an example of the latter situation. Most of the studies of the demand for automobiles indicate the price elasticity for new car purchases to be between -1.2 and -1.5, although there is reason to believe that during periods of economic decline the elasticity might be over -2.0. In contrast, representatives of the industry make no secret of their firm conviction that demand with respect to price is quite inelastic. And, as has been noted above, the industry has suffered from substantial decreases in sales in the face of which prices have been increased.

Finally, the character of the incentives inherent in target pricing tends to induce management to magnify cost increases in their price actions. Most corporations which price on this basis set their prices to cover a considerable period of time, usually a year, in advance. At the time when the corporation's management establishes prices, they may know reasonably well how much certain items will increase in cost during the year, but for others they must make approximations. In

arriving at these approximations all of the incentives will tend to make them overliberal; none will operate in the opposite direction. There is no penalty—indeed, there may be a reward—for exceeding the target profit rate; the penalties may be quite serious for failing to attain it. It is this consideration which may explain in good part the finding reported by Lanzillotti that "for the nine-year period 1947-1955 the target-return companies earned on the average slightly more to substantially more than their indicated profit objective."

In asymmetrical oligopolies the oligopolists other than the leader, i.e., the price "followers," do not usually price in terms of any target return of their own. The Brookings survey included two corporations which are lesser oligopolists in industries dominated by a leader: Gulf Oil and National Steel. In neither case was pricing to achieve a target return found to be the company's principal, or even a collateral, pricing goal; for Gulf Oil the principal objective, according to Lanzillotti, was to "follow price of most important marketer in each area" and for National Steel it was "matching the market." In hearings before the Subcommittee on Antitrust and Monopoly, Senator O'Mahoney brought out that Ford does not price in terms of a target rate objective; like Gulf and National, its objective is to "meet competition."

The testimony given in hearings and the material presented in the Subcommittee's reports clearly reveal that by "meeting competition," Gulf, National, and Ford, as well as other oligopolists in their respective industries, mean meeting the leader's price change, regardless of its direction. Of course the effective price leader is often not the first to announce his price change, but it is his decision which determines whether the new price will hold. This is almost inevitably the case when the price raise announced by a smaller producer is greater than is desired or thought appropriate under the circumstances by the leader. In the oil industry there have been frequent occasions when a smaller firm has announced a price increase only to withdraw it when it was not adopted by the leader. In the steel industry, the Alan Wood Steel Company announced on June 25, 1958, that it was going to raise its price by $6.00 a ton effective July 7. When U.S. Steel did not see fit to follow, Alan Wood had no alternative but to withdraw the increase. On July 30, Armco and Republic announced an increase of $4.50, effective August 1, expressing the hope that U.S. Steel would do likewise. U.S. Steel did, and the increase held.

Where the smaller firm's price increase is less than that desired by the leader, it can revise its price upward to meet the higher price of the larger firm. For example, in introducing the 1957 automobile models Ford was the first of the Big Three to make public its prices, which showed an average increase of 2.9 per cent. Some two weeks

later, Chevrolet's prices were announced, but they represented an average increase of over 6.1 per cent. Shortly thereafter Ford revised its prices upward, bringing them almost exactly into line with Chevrolet's higher prices. When a smaller firm is the first to announce a price increase, its aim is to guess what the leader will do and do likewise, and since revisions are always possible any error in judgment can be quickly corrected.

Whether the followers are acting independently or in collusion with the leader is not the issue in this particular discussion. As Machlup has pointed out, the term "independent" has many meanings, and there are successive "degrees of collusion":

> Complete absence of collusion implies . . . the firm may try to guess the competitor's reactions to its actions, but it may never expect particular reactions with any confidence. In actual fact, however, oligopolists in most instances think they know pretty well what reactions they can expect from their competitors and, moreover, their expectations ordinarily prove correct. (Machlup, *op. cit.*, pages 434-439.)

At some degree the nature of the collusion becomes such as to meet the legal tests required to establish a violation of the antitrust laws, although the nature of these tests will probably always remain a matter of dispute. Thus, in connection with the practice of upward price matching, Machlup has observed, ". . . expectations of price followership in the case of price increases by one of the sellers" represents a "higher degree" of collusion. (*Ibid.*, page 439.) Yet, both the Assistant Attorney General in Charge of the Antitrust Division and the Chairman of the Federal Trade Commission have recently testified that they do not see in the recent uniform price advances in the steel industry evidence of conspiracy or any other unlawful act.

The question at issue here, however, is the explanation for conformity to the leader's price increase in a period of significantly depressed demand, regardless of whether collusion (and the degree thereof) is involved. To be meaningful, of course, the question must presume that the followers are as efficient or, preferably, more efficient than the leader. This certainly seems to be the case in both oil and steel where several of the lesser oligopolists, including specifically both Gulf and National, enjoy higher profit rates than the leaders, have access to low-cost materials, and operate highly efficient plants.[14]

Conformity with upward price changes should not be regarded as necessarily inherent in the nature of things. Incentives do exist for the lesser oligopolists, particularly if they are more efficient, to ignore the

[14] Even in automobiles, where the leader is widely assumed to be the most efficient producer, Ford's net profit per car resulting from automotive operations during 1954-57 would not have been substantially below that of General Motors had Ford been able to secure the same average revenue as General Motors through more effective coverage of the price range above the low-price field and had it not incurred the unusual expenses of reviving the Continental line in 1955 and introducing the Edsel in 1957.

leader's price increase. Oligopolists, whether leaders or followers, are by definition of sufficient size to be able to withstand, at least for some time, the usual disciplinary actions which could be successfully employed against small firms. Perhaps the strongest incentive for a lesser oligopolist to pursue an independent price policy is the lack of certainty that the leader would, in fact, rescind his increase if he were confronted with a lower price. Where the smaller firm's capacity is sufficient to supply only a relatively small proportion of the total demand and where he cannot quickly expand his capacity, the leader may conclude that the revenue lost on orders going to the lower price firm is less than the amount which he would lose by reducing his price. Moreover, there is the possibility of a time lag. The leader may not rescind his increase until the lesser oligopolist has enjoyed the benefit of a pay-out period in which the revenue lost by failure to raise the price is more than offset by an increase in sales volume. However, the alacrity with which the followers in oil, steel, and automobiles have matched the price announcements of their leaders suggests that at least in these fields little use is being made of this opportunity.

Another opportunity for nonconformity arises when the leader labors under a cost burden not borne by the followers. An opportunity of this type has been available to Ford and Chrysler in those years in which they have not, but General Motors has, incurred the very considerable expenses involved in making complete model changes. The 1958 Plymouth was virtually indistinguishable from the 1957 model; the 1958 Ford did not have a complete model change but only a "face lift"; only Chevrolet of the Big Three underwent a complete model change. The opportunity was thus presented to both Ford and Plymouth to make gains in sales at the expense of Chevrolet by holding their prices unchanged. Had Chevrolet then endeavored to match these lower prices, its profits per car would have been very materially reduced. That Chevrolet under these circumstances would have rescinded its increase is something less than self-evident. Yet while the opportunity presented itself, neither Ford nor Plymouth availed themselves of it but instead matched the Chevrolet price increases.

While these and other opportunities have certainly existed, nonconformance in recent years appears to have been something of a rarity. Perhaps the principal explanation (which might go by the term of "imperfect competition once removed") is the expectation by the followers that if they do not participate in the price rise, the leader will rescind his increase, in which event the follower would have gained nothing in the way of increased sales volume and would have foregone the added revenue from the price increase. With his price met, would the follower then want to take the next step of cutting prices? Because

what he would now be considering is a price reduction, the logic of imperfect competition would come into play; presumably he would abstain from lowering his price since his output, by definition, is large enough to affect the market and since he would assume that any price reduction would be promptly met.

A second reason why followers tend to follow stems from the difference between the leader and the followers in the degree of product diversification. Characteristically, dominant oligopolists produce a wider range of products and are engaged in more industries than are their lesser rivals.[15] Their participation in other fields is frequently on a scale sufficient to give them substantial degrees of monopoly power, which they can thus bring to bear through various forms of "leverage" on any one of the products or industries in which they are engaged.[16] This advantage of the dominant over the lesser oligopolists, which is present at all times, becomes particularly important if one of the latter elects not to participate in a price increase.

If, following a price increase by a multiple-product firm on all of its products, a single-product firm making one of those products were to hold its price constant, the rescission by the former of its price increase on that product would lose for it the added revenue on only part of its output, whereas the single-product firm would have foregone the added revenue on its entire output. Moreover, the single-product firm would realize that the disparity in the revenues of the two companies would inevitably widen if it were to engage in a price-cutting war, assuming its larger rival were to match its price reductions, while holding its prices unchanged on its other products. As between a single-product and a multiple-product company a price reduction on the product made by each will always result in a greater relative loss of revenues to the single-product than to the multiple-product company.[17]

[15] This proposition is virtually self-evident. It is supported by the data contained in the report of the Federal Trade Commission, *Industrial Concentration and Product Diversification in the 1,000 Largest Manufacturing Corporations, 1950*, Jan., 1957. See, particularly, Appendix C, Table 1, pp. 152-254.

[16] Cf. John M. Blair, "The Conglomerate Merger in Economics and Law," *Georgetown Law J.*, Summer, 1958.

[17] This can be illustrated by the following example in which the smaller firm makes successive price reductions on product A, each costing 1 million dollars in revenues, which are matched by the larger firm at a similar cost, while at the same time the revenues of the larger firm on product B remain unchanged:

Single-Product Firm*	Multiple-Product Firm*		Single-Product Firm's Revenues as % of Multiple-Product Firm's
Product A	Product A	Product B	
$10	$10	$10	50%
8	8	10	44
6	6	10	37
4	4	10	28

* Millions of dollars.

Implications

Except in periods of severe depression, the analysis presented above suggests that in oligopolistic industries, other factors being equal or unequal, prices will rise. And unless these increases are offset by price declines in atomistic industries, the result will be a rise in the general price level. Although time does not permit a discussion of the economic effects of a continuing increase in prices, certain possible implications with regard to consumption, production and capital formation may be briefly noted.

Assuming no change in the propensity to consume versus the propensity to save, continued price increases will obviously tend to reduce consumption, unless of course there is a corresponding increase in income payments. Certain types of income payments—notably profits and perhaps wages of organized workers—may well keep pace with, if not exceed, the increase in prices, but other types, such as pensions and annuities, wages of unorganized workers and salaries of white-collar employees will most certainly lag behind. If, as seems certainly possible, the decline in real terms of those forms of income payments which are more or less fixed is not offset by an increase in real terms of the more flexible types of income payments, the result, of course, would be a decrease in total consumption.

The effect on production will be through reductions in output made to support the higher price levels. One of the most important—and certainly the most overlooked—contribution by Gardiner Means was his discovery that the less was the decrease in price during 1929-32, the greater was the decrease in production, and vice versa. In later studies this inverse relationship has been found to exist regardless of the type of price data used; and it has been found to exist not only within manufacturing as a whole but within groups of relatively homogeneous products; i.e., consumer goods, durable goods, etc. If this relationship existed during a time of severe depression when prices in oligopolistic industries remained relatively constant, would not the logical inference be that it will continue to persist during a time of moderate underutilization of capacity when prices of oligopolistic industries are increased?

The effects on capital formation are ambivalent. On the one hand, a continued upward movement in prices should provide the funds needed for investment in new plant and equipment. But, on the other hand, reductions in output which leave substantial proportions of existing capacity unutilized might make the construction of additional capacity appear not only pointless but also dangerous to the future stability of the market.

It should be emphasized, however, that these effects are suggested only as possibilities. A great deal more needs to be done on all aspects

of administered prices, but particularly on their economic effects. Until this is done there will remain an important gap in the body of economic theory—a gap explicitly noted by Keynes who recognized that " 'administered' or monopoly prices" represent an exception to his general theory.[18] In view of their importance not only in this country but in other industrial economies of the world, the need is for a general theory from which administered prices will not be an exception.

[18] "If money wages are inflexible, such changes in prices as occur *(i.e., apart from 'administered' or monopoly prices which are determined by other considerations besides marginal costs)* will mainly correspond to the diminishing marginal productivity of the existing equipment as the output from it is increased."

. . . .

"*Apart from 'administered' or monopoly prices,* the price level will only change in the short period in response to the extent that changes in the volume of employment offset marginal price costs; whilst in the long period they will only change in response to changes in the cost of production due to new techniques and new or increased equipment." (John Maynard Keynes, *The General Theory of Employment, Interest and Money,* Harcourt, Brace and Co., 1936, pp. 268, 270; emphasis added.)

DISCUSSION

GARDINER C. MEANS: Dr. Blair has most appropriately referred to administered prices as "a phenomenon in search of a theory." In my belief, this phenomenon requires the rebuilding of practically all economic theory except that of perfect competition. Let me develop this thesis, drawing from the preceding papers in the process.

Dr. Blair has suggested that an explanation for price inflexibility in a serious decline of activity can be found in the Chamberlin-Robinson theories of monopolistic and imperfect competition. He has in mind, of course, the fear of starting a price war. I agree with Dr. Blair that this could be an explanation. But I believe the matter is much more fundamental. A rigorous application of Chamberlin's theory would lead us to expect, not price wars, but flexible administered prices.

Let me spell this out in the simplest case—that of duopoly. Assume two competitors dividing the market and having somewhat similar cost curves in the production of a practically identical product. Also assume that they have been competing with each other long enough to know the futility of price wars and both expect that, whatever the price, it will be the same for both. Chamberlin's theory calls for each to act as if he had constructed a demand schedule for the industry, had calculated his share of the market at each relevant price, and had arrived at the paper price most favorable to him on the assumption that he had a monopoly of his share of the market. I will refer to this as his share-monopoly price. Then either through trial and error or through price leadership, the price would be set by the competitor with the lowest share-monopoly price.

Would this price be inflexible to a fall in demand? Only in special cases, especially if the cost curves were horizontal or sloping down to the left in the relevant sections. A downward shift in the demand schedule toward the origin would usually lower the share-monopoly price for each competitor and result in a price reduction, thus giving price flexibility.

If this is accepted, then inflexibility will, I believe, force two major modifications on both the theory of monopoly and that of monopolistic competition. Monoply theory seeks to explain how a rational monopolist would behave if he aimed to maximize his profits in the short run. I do not question the classical version of the monopoly calculus where the monopolist seeks to maximize short-run profits and has a clear idea of the characteristics of the demand for his product. But where the price administrator has great uncertainty as to demand, I do not believe he is rational if he constructs a probability demand schedule as the theory requires and makes the rest of his calculation on this basis. Nor do I think it would be possible to establish that the rational procedure would give the same result as that implicit in the classical calculus.

The second inadequacy in the classical theory of monopoly is that it applies only where the price administrator seeks to maximize profit in the short

run (or, if you prefer, to maximize the discounted value of a series of short-run maximizations, perhaps adjusted for conflicting maximizations). The evidence of the behavior of administered prices makes it clear that many price administrators do not seek to maximize profit in the short run. Also, I do not believe that the phrase "to maximize profits in the long run" has any significant meaning. I do believe that the tendency to adopt target pricing, which Dr. Lanzillotti has brought out so clearly in his article in the current issue of the *Review*, is not only rational behavior, but it cannot be derived from monopoly theory or from Chamberlin's theory of monopolistic competition which relies on the monoply calculus.

In questioning the applicability of the Chamberlin theory to the typical inflexible administered price situation, I do not want to minimize the great contributions that Chamberlin and Robinson have made to our understanding of monopolistic and imperfect competition. Without their pioneer work, we could not so easily take the further steps. What I am suggesting is that we need to take realistic account of the effect of demand uncertainty on rational behavior and that we need to clarify the rational for rejecting short-run profit maximization. I believe these are part of a single problem.

The second point of theory I want to take up concerns the newness of inflexible administered prices. Many years ago, Dr. Rufus Tucker pointed out that Adam Smith was familiar with sticky prices and implied that because there was nothing new in such prices, they had little significance for current thinking. The trouble with Tucker was that he did not go back far enough or apply his findings to economic theory. He should have gone back to the middle ages and the price administration of the medieval guilds. He could then have pointed out that a major purpose of Adam Smith and the early classical economists was to undercut the restrictionism of guild and government and show how flexible prices would automatically serve, not only individual liberties, but also the wealth of nations. Tucker should then have gone on to point out that classical theory nowhere introduced price inflexibility into its analysis either as a conclusion of rational behavior or as a basic assumption in its system building.

Consider classical theory as it stood a generation ago. It is epitomized in Walras' famous system of equations which rested on the assumption of flexible prices that equated demand and supply. First, it should be noted that the Walrasian system as an equilibrium system is perfectly compatible with monopoly and oligopoly so long as prices are assumed to adjust continuously to the most profitable price. Of course, with monopoly or oligopoly, the Walrasian equilibrium would not yield the maximum satisfaction that perfect competition was presumed to yield, but it would produce an equilibrium solution. On the other hand, if a single price is assumed to be inflexible, that system of equations becomes insoluble. Thus the Walrasian model represents a special case—that for perfectly flexible prices.

The question arises, can the Walrasian system of equations be generalized to apply to inflexible as well as flexible prices? Professor Viner, of Princeton, says it cannot be done. I am not convinced. I have already developed a system of equations for a simple economy which will yield an equilibrium solu-

tion whether all prices are assumed to be perfectly flexible, all prices are fixed, or any combination of flexible and fixed prices is assumed. Until the inflexibility of administered prices is adequately explained as a product of rational behavior and until this inflexibility is introduced as an assumption in our system building, it seems to me that much of our theoretical economic work bears little relation to reality.

Even Keynes in his *General Theory* falls short in this respect. As the section Dr. Blair quoted from that work discloses, Keynes was aware that his theory did not take account of the behavior of administered prices. At the time he was writing the *General Theory*, we had some correspondence on the inflexibility of administered prices, and when I talked with him in the summer of 1939 he repeatedly referred to the unreality of the classical assumption of flexible prices which he had made in the *General Theory*.

This brings me to my third point: demand inflation, or what I prefer to call monetary inflation. Dr. Ackley has, I think, taken a major step in the right direction. He has shown how, in the case of administered prices, the impact of a general excess of demand works itself out to a considerable extent through a rise in raw material and labor costs which produce an upward revision of administered prices. The end result of a general excess of demand a general rise in prices, is thus the same as that in a classical inflation, but the process is different.

What Dr. Ackley failed to bring out is a second important difference; namely, that the general price rise takes place in two phases instead of one. In the first phase, the average of prices rises to the point where aggregate demand is no longer in excess. But in this phase flexible market prices rise much more than the average while administered prices lag behind. This results in a badly distorted price structure. Then, in the second phase, the level of prices remains fairly stable while market prices fall and administered prices continue to rise until they have reached adjustment with the new price level. This happened after World War II, with each phase taking about two years to work itself out.

When Dr. Ackley seeks to generalize his analysis to all types of inflation, I become skeptical. Particularly, I question his suggestion that the distinction beween demand inflation and cost inflation loses most of its relevance. Certainly his analysis does not apply to the rise in the average of prices in a period of economic recovery. Perhaps he would say such a price rise is reflation, not inflation. But also, I do not think his analysis applies to an administrative inflation which can arise in the absence of excess demand. Then the distinction between an inflation arising from demand forces and one growing out of administrative discretion, whether exercised by business or labor, becomes important.

Now for my final point: administrative inflation. Dr. Blair has clearly set forth three pressures for inflation which can arise from administered prices even in the absence of excess demand. I want to underwrite his analysis and amplify it in two minor respects.

His first point—a too rapid rise in wage rates—needs no comment except that perhaps its actual importance has been exaggerated.

His second point—the effect of competition in raising costs and, ultimately, prices—seems to me not only clear but more pervasive than Dr. Blair suggests. He applied this concept to competition between an established group of oligopolists. But it also applies in a different way where there is such oligopoly as that of most retail stores and where access is easy. As Walton Hamilton pointed out many years ago, if the margin between the wholesale and retail price of gasoline is initially set too high and maintained inflexible for a sufficient period, the first effect will be too high profits for the gas station operators. Then under competition new stations will be opened until the available business is so divided up that the typical gas station only makes a reasonable return. In this case, competition brings price and cost into reasonable relation to each other by increasing costs, not by reducing price. I believe this cost increasing effect can be very extensive.

As for Dr. Blair's third inflation factor—the increase in price when demand falls in order to maintain a target rate of return—it seems to me this behavior is not only important but lies entirely outside the Chamberlin analysis. Also, it should be pointed out, this type of price increase has a limit when the short-run most profitable price is reached. This, like the first two sources of administrative inflation, is a source which could not lead to runaway inflation in the absence of an excessive money supply.

Let me close by repeating my belief that most aspects of economic theory except that of perfect competition need to be re-examined in the light of the phenomenon of administered prices. In my opinion the two papers at this session have taken an important step in this direction.

RICHARD T. SELDEN: I should like to identify myself at the outset as one of those "reactionaries" who believes that administered pricing, whatever impact it may have on resource allocation, income distribution, and growth, has little to do with either initiating inflation or determining its extent. It will come as no surprise, therefore, that most of my comments on Dr. Blair's and Professor Ackley's papers are critical in nature, despite the fact that both papers are interesting and praiseworthy in many respects. Since Blair's paper deals largely with the causes of administered price behavior and only in a brief concluding section with effects, I shall direct my remarks principally toward Ackley's paper. It should be noted, however, that Blair regards inflation as a major evil resulting from administered prices and that my criticism of Ackley, if valid, applies equally to the relevant portions of Blair's paper.

In the first half of his paper Ackley attacks the traditional demand analysis of inflation; furthermore, he rejects the common distinction between demand and cost inflation, and develops a "third approach" which incorporates both cost and demand elements but emphasizes the role of pricing rules. The remainder of his paper, except for a brief concluding section on policy implications, attempts to demonstrate the validity of this third approach by applying it to a specific inflationary episode—that of 1950-51. The argument is complex, and a summary may therefore be useful.

Ackley argues that: (1) traditional demand inflation theories assume that prices are always at market-clearing levels, whereas actually most prices are

administered and are not usually at such levels; (2) since administered prices are usually set by applying a stable markup to costs, a rise in demand has no direct effect on these prices; (3) however, a rise in demand stimulates purchases of inputs and eventually transmits upward price pressure to the non-administered sectors, which include raw foods and some raw materials; (4) the rise in market-determined prices tends to increase administered prices in two ways: materials costs rise and wages rise because of higher living costs; (5) the rise in administered prices means still higher living costs and wages, and the spiral continues, perhaps for a "considerable time and distance" and even after aggregate demand is no longer excessive; and, finally, (6) the role of demand is further diminished by the existence of speculation and inflexible production cycles which often dominate raw materials markets and prevent the price rises which would otherwise lead to higher administered prices.

All things considered, Ackley concludes that "very little remains of our traditional demand inflation model." For several reasons I cannot accept this conclusion, even though the discussion is stimulating and probably accurate in many details.

In the first place, it is not true that demand theories rest on the assumption of market-clearing prices. All that is necessary is that, given stable cost conditions, an increase in demand will soon result in higher prices, whether administered or not, for a large segment of the economy.

Second—a closely related point—in my judgment Ackley seriously underplays the role of demand as a determinant of administered prices in the real world. Of course there may be a substantial lag in some cases between demand increases and price increases; quite apart from sheer bureaucratic delays, businessmen are becoming more and more public-relations conscious—thanks in some measure to Dr. Blair's efforts in Washington—and they have learned to withhold price rises until they can be camouflaged by simultaneous announcements of rising costs or quality improvements. A careful study of the BLS wholesale index during 1955-57 has convinced me that such lags are fairly short for most commodities. I was also struck, incidentally, by the number of prices, including some that are supposedly administered, that declined for prolonged intervals while the over-all index pushed steadily upward; and by the clear evidence of strong demand in nearly all the industries that accounted for most of the index rise.

In this connection Ackley recognizes that the crucial point is the stability of markups. He cites approvingly Heflebower's emphasis on demand and competitive factors as determinants of markups, but goes on to argue that these factors "operate primarily on the internal structure of markups." Even if one were to accept this proposition, which I do not, changes in the internal structure of markups can have an important effect on the wholesale price index or any other broad indicator of the general price level.

But let us consider a third objection to Ackley's line of argument, which brings us, I think, to the heart of my disagreement with him. Ackley does not develop his theory of inflation within the framework of generally accepted macro-tautologies. The equation of exchange tells us that any rise in the price

level must be accompanied by a rise in M, a rise in V, or a decline in T. This is true regardless of the source of inflation, the size of the price rise, or the nature of the inflationary process. Since Ackley omits any mention of M, we may conclude that his argument is meant to apply even when the stock of money is constant. And since he clearly thinks it relevant to conditions of prosperity in which T is rising, not falling, Ackley's model implies rising velocity during inflation. This, of course, is a well-documented fact. But velocity is not just an arbitrary number; it is a reflection of the public's demand for money to hold, plus the cost of holding money. Is there any reason for thinking that business pricing practices can affect velocity? Although one can scarcely deny the possibility of this, it does not seem to me to be a likely or quantitatively important possibility. For this reason I find it hard to believe that the inflationary spiral may continue "even after aggregate demand is no longer excessive"; or that "the interaction of wages and prices may well produce an inflationary 'creep' even in the absence of excess demand." In my view it would be more accurate to say that cost pressures may raise particular administered prices (or even nonadministered ones, for that matter) even when demand is not excessive, but that by and large this can occur only to the extent that there are compensating price declines elsewhere in the economy, so that the price level remains approximately stable. Similarly, it is hard to believe that except for the existence of administered prices even a modest excess demand would result in a price-level explosion. The velocity assumptions implicit in this proposition are totally unrealistic.

I think I have said enough to indicate that the traditional theories of inflation are still alive and kicking, despite Professor Ackley's skillful thrusts. Before closing, however, I shall comment briefly on his discussion of the experience of 1950-51. Ackley holds that the rapid rise in prices during the seven months following the outbreak of war in Korea was mainly speculative in nature, and therefore not consistent with demand interpretations of the period. He further holds that most manufacturers' prices "rose by no more than and perhaps by less than the rise in relevant direct costs," implying stable or declining markups during what most people regard as a classic example of demand inflation.

I do not find these arguments in any way damaging to the hypothesis that excess aggregate demand caused and determined the extent of the post-Korean inflation. The idea that fear of wartime controls or of rising prices will produce a flight from cash is in the best classical tradition, and I fail to understand why Ackley thinks otherwise. And inventory building, after all, is a legitimate and important segment of aggregate demand. It is not at all surprising that the effects of excess demand were felt first in the raw materials markets under the prevailing circumstances.

With regard to Ackley's finding of stable markups, I would make two comments. First, the finding is open to challenge inasmuch at it is inconsistent with aggregate data for manufacturing during this period. Manufacturers' profits before taxes rose with great rapidity in the third and fourth quarters of 1950, and they remained high in the first quarter of 1951. Since neither sales nor industrial production climbed nearly as fast, it seems clear that average

pretax markups rose substantially. Second, even if this aggregate evidence is discounted, and I see no reason why it should be, Ackley has himself supplied the reason why markups advanced no more than they did: demand was not greatly excessive for most manufactured goods.

In conclusion, the strength of Ackley's analysis is his emphasis on the process of inflation, which admittedly is a topic worth explaining. But in emphasizing process Ackley has blurred the fundamental distinction between statics and dynamics. In my judgment, we are still vitally concerned with the causes and extent of any departure from price-level equilibrium. And on these aspects of the inflation problem Ackley's conclusions for the most part are untenable.

WROE ALDERSON: The second of the two papers was called "Administered Prices: A Phenomenon in Search of a Theory." My own observation, as a management consultant on pricing and other marketing problems, is that business administration of prices is a real phenomenon, but one which differs greatly from the situation first described by Gardiner Means nearly a quarter of a century ago. So far as its theoretical structure is concerned, Dr. Blair's paper could have been written as a commentary on the Means's thesis shortly after it was announced.

Perhaps this statement does not do justice to some of the ideas advanced by Dr. Blair, as, for example, his assertion that prices designed to yield a target return on investment are inherently inflationary. This section troubled me greatly when I first read the paper, since it seemed to be saying that the profit component in price could somehow be greater than the maximum profit that would accrue if the businessman was pursuing a straight monopolistic policy.

Actually a target return can only be equal to or less than the optimum return. If it is less, the same target return could accrue at two different levels of sales volume—one lower than the optimum volume and the other higher. From my own business experience I would normally expect a target return to be coupled with the higher volume level. That is because one reason for setting a target return is that continued growth is often the primary goal, with immediate earnings secondary. The target return in such cases can best be interpreted as a constraint on an otherwise unlimited goal of growth.

While I am skeptical about Dr. Blair's analysis of the more direct inflationary effects of target return pricing, I can agree that the long-run effect of growth goals might be inflationary. The drive for expansion which is characteristic of all aspects of American life doubtless generates increasing pressures against scarce resources. Big labor may push its claims faster than increases in productivity accrue. Bureaucracy in both big business and big government may expand in accordance with "Parkinson's law." Both private debt and public debt may continue to mount in the effort to finance expansion programs.

If Dr. Blair's contention was that the pursuit of a target return might tend to make prices more sticky, I would have no difficulty in agreeing with him. This would help to explain failure to revise prices downward more promptly

in recession or to revise them upward in revival. Sticky prices, however, are not in themselves inflationary. On the average they might be slightly deflationary in an economy with a strong growth trend.

I feel especially indebted to Dr. Ackley, the author of the first paper, for broadening the definition of administered prices. He designates the price of labor under union contracts as an administered price. This characterization seems to me altogether appropriate, but it should be noted that it differs significantly from the conception of administered prices originally presented by Gardiner Means. Union wage contracts are jointly administered by the buyers and sellers of labor rather than by the seller alone. Price administration in this case is conducted under actual or potential government supervision.

These features suggest the vast changes in the phenomenon of price administration since the mid-thirties. Government stands at the elbow of every business price administrator through its enforcement of such legislation as the Robinson-Patman Act. Government, as a buyer, engages in price administration in the purchase of many commodities, including farm surpluses. The task of the price administrator in business has generally grown much more complex through the expansion of product lines, often sold through quite different trade channels. This means relatively greater emphasis on the administrative problems of price structure and price differentials as compared to price level.

To return to the quest for a theory of administered prices, it is my feeling that the discussion has become sterile because it has failed to progress beyond the simple dichotomy with which it began. Some industries were said to adjust to depression by cutting prices and others by cutting production. A somewhat more elaborate scheme would appear to be needed matching several types of supply decisions and related decisions as to price. The supplier might make decisions with respect to present inventory, further production with present capacity, and expansion of capacity.

The supplier might look at present and future prices in quite different ways in considering each type of supply decision. The manufacturer who tries to work off his existing inventory at established prices might simultaneously be working toward a lowered cost structure in order to reduce his prices on further production. Simultaneously, he might be studying markets for the somewhat more remote future and at some point in time become sufficiently optimistic to start building plants to serve anticipated consumer demand for ten to twenty years ahead.

The decision pattern is quite different for industries with large fixed investment as compared with agriculture and some other fields of enterprise. The farmer makes his principal production decisions at a particular season, while the manufacturer can make less sweeping decisions from time to time throughout the year. At no time does the manufacturer have an entire year's supply to market or withhold from the market as the farmer may have with his entire crop of wheat. On the other hand, the manufacturer makes commitments for a much longer time ahead with respect to capacity.

There are various options as to price which might be considered with respect to the three types of supply decisions which have been mentioned. Certainly no study yet made provides an adequate analysis of this decision structure which would permit a valid comparison between one class of industries and another. Perhaps it is not even practical to make such a study. It should be possible, however, to build a theoretical model which would throw greater light on the issues of public and private policy involved in the phenomenon of administered prices.

MARTIN J. BAILEY: Mr. Blair's paper, ostensibly directed to a problem of theory, also raises important issues of fact. In the interest of brevity, I shall confine my comments here entirely to these latter issues. The principal issue, I think, is the following: What relationships between prices and marginal costs will be found in various industries on close examination?

The relationship between price and marginal cost that is primarily under consideration here is that prevailing in short periods of economic boom or recession rather than that between average prices realized over long periods and long-run marginal or average costs. Where firms choose or are forced to accept price-output combinations at which price equals marginal cost more or less continuously, they may quite properly be described as pricing competitively, regardless of what it might conceivably be possible for them to do or what they might like to do, if they could. Conversely, significant systematic discrepancies between price and marginal cost at chosen levels of output may be described as noncompetitive pricing, regardless of what other factors or protestations may be present. The issue of fact is therefore extremely simple in principle, even though difficult to get at in practice.

The difficulty in getting at this information is greatly aggravated by the fact that businessmen talk about prices in at least three entirely different senses, without discriminating between them. In the first place, there are price expectations for long future periods which they contemplate when deciding whether or not to make investments. In the second place, there are shorter run aspiration levels, or prices they would like to get, on the average, assuming that they have sunk certain investments, and have to make the best of it. Thirdly, there are the prices actually realized in a day-to-day selling process. The path of the would-be investigator of big business pricing is made much more difficult by the fact that whenever a businessman discusses price he does so almost invariably with an indiscriminate mixing of these three price concepts. The confusion which results may make almost impossible any sure knowledge of the behavior of the prices actually realized from day to day by the firms such businessmen represent.

In this connection I would mention the Brookings study cited by Blair which itself is guilty of a good deal of this confusion but which also sheds much useful light on it and on related matters.

Although various attempts have been made to provide evidence more or less on the question at issue for the economy as a whole, none of these attempts has hit the mark. Gardiner Means's classic study of the apparent correlation

between concentration and price flexibility and Blair's subsequent work along the same lines, cited by him, make no allowance for differences from industry to industry in the variability in marginal costs; this consideration could make the observed correlations essentially spurious. The cited works of Neal and Thorp and Crowder suggest that these observed correlations might indeed be spurious; but even apart from the defects of the data used these works do not bear on the main question either. In the first place, they used figures representing average variable costs rather than marginal costs; and these of course are quite different concepts. In the second place, even if marginal costs, correctly measured, had been used and even if they had explained 100 per cent of the variation in realized prices, this would not prove that prices and marginal costs were equal. Almost any of the theories at issue, as our chairman pointed out in his work on monopoly, is consistent with such a correlation.

Until some truly relevant factual material is brought forward, the most that we can hope for is to avoid the confusion between different price concepts which I mentioned earlier, and to keep clearly in mind what we need to know. Unfortunately, however, the confusion between price aspirations and realized prices has often not been avoided in discussions among economists around this general subject.

Mr. Blair has not avoided it; and in this connection if he had asked my advice I would have suggested that he give his paper the title, "Administered Prices: A Theory in Search of a Phenomenon."

But it is no less important here than elsewhere in our work to follow the self-denying ordinances of skepticism and scientific detachment, even in a matter so near to religion as the theory of the price behavior of big business. Indeed, it is especially important to do so, since this matter is now a question of considerable public debate and possible policy action. In particular, various prominent persons have gone on record as proposing in effect that the noble order of sidewalk superintendents, of which the Kefauver committee and its staff are leading present-day members, should be elevated to permanent legal status and representation through public hearings before every announced price increase by whatever firms are chosen as objects of this favor. This proposal carries with it, of course, the thinly veiled threat of direct controls. (In the actual presentation of these remarks I made the gratuitous error of attributing this policy position to Mr. Blair, for which I apologize.)

In view of the policy relevance of this discussion, therefore, it is pertinent to consider what an appropiate policy might be. On the one hand, if a successful serious investigation of the relationships between marginal costs and prices should reveal that prices were substantially equal to marginal costs in most industrial markets, I would presume that this would call for no policy action at all. On the other hand, what if the converse finding were reached? In my own case, if faced with the unpleasant choice between big business pricing in all its wickedness, as described by Blair, and the proposed remedy, I would almost certainly choose the former. That is, taking the described big business pricing actions at their face value, restrained as they are by occasional dramatic antitrust actions, the admitted threat of potential competition, and

by continual heckling from the sidewalks, I think that the implied results can be no worse from an economic standpoint than anything which could seriously be expected to result from the proposed public hearings and the controls likely to follow.

Concerning Mr. Ackley's paper, the remarks I had prepared would come as a distinct anticlimax to those just made by Mr. Selden. I shall therefore confine myself to re-emphasizing one point which Selden made. That point is that the process of a spiral as described by Ackley simply will not work unless 100 per cent, or substantially all, of the economy is engaged in it. If any signficant part of the economy is competitive in the fullest sense, the effect of administered or monopoly prices and/or wages will simply be to raise the relative share of total income of the noncompetitive sector, without appreciably raising the general price level. The restrictive effects of the supposed noncompetitive behavior will cause resources to move to or remain in the competitive sector, depressing prices in that sector. Given that aggregate demand is unchanged, as it will be if there is no monetary expansion, the fall in prices in the competitive sector will offset the rise in the noncompetitive sector, and the general price level will stay where it is.

In conclusion, and in general, I would say that there is a constant and perhaps growing pressure on the economics profession to accept and legitimize the clouds of loose thinking and folklore about economic matters prevailing among businessmen and among noneconomist intellectuals. The primrose paths along which these pressures can impel us are well represented and illustrated in the two papers of this session. I trust that by and large we shall watch our steps.

STUDIES IN THE CLASSICAL ECONOMICS

WHAT WAS THE LABOR THEORY OF VALUE?

By Donald F. Gordon
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In a discipline that has long been rife with confused controversy, there is no concept, or perhaps I should say there is no word, which has borne a greater share of this confusion than has the notion of value; and around no set of doctrines concerning value have the problems been greater than around those that are normally called labor theories of value. This paper will attempt to establish, or at least affirm, two points; first—based mainly on accepted interpretations—that no major economist of the classical period held what would, by modern usage, be called a labor theory of value; second, that the three most eminent alleged labor theorists did nevertheless hold what could be accurately called a labor theory, but in a different and radically distinct sense of that term. Except for a few words on Marx, I will confine myself to the English literature.

By the modern meaning of the phrase "theory of value," the labor theory of value is presumably the proposition that commodities exchange at ratios that are reciprocals of the quantities of labor involved in their production, including, of course, that involved in the creation of capital goods, back to the Stone Age if necessary. Let us call this proposition "the labor theory of relative price." I will now turn to a brief survey of the classical period, looking for conclusive statements indicating that such a proposition was or was not a part of any leading system.

The case of Adam Smith presents little difficulty. In Chapter VII of Book I ("Of the Natural and Market Price of Commodities") he provided a classic account of how, in a competitive market, the prices of commodities—through shifts in the allocation of the factors—approach equality with their money costs of production, where the latter are estimated by the quantities of the three traditional factors remunerated at their natural or usual rates. Surely here there is no labor theory of relative prices.

Professor Stigler has recently[1] given us a convincing demonstration that Ricardo, likewise, did not subscribe to this proposition. Like Adam Smith, he accepted the theorem on the long-run equality of price

[1] George Stigler, "Ricardo and the 93% Labor Theory of Value," *A.E.R.*, June, 1958, pp. 357-367.

and cost. For all nonagricultural commodities, in which land is presumed not to enter, long-run average and marginal costs are presumed to be constant, but among these the proportions of capital to labor vary considerably. Thus fluctuations in the rates of wages and profits will cause fluctations in the relative prices of these commodities, unconnected with any changes in their relative labor contents. This is the critical conclusion for our present purposes, and one which Ricardo demonstrated tirelessly, over and over again, in his *Principles* and other writings. It is also true, but not relevant to our purposes, that Ricardo believed that the influence of fluctuations in wages and interest rates on relative prices is not large enough to be empirically significant[2] On the basis of a comment of Ricardo's that this influence on relative prices "could not exceed 6 or 7 per cent,"[3] Stigler felicitously names this a "93 per cent labor theory of value" (or in our terms, a 93 per cent theory of relative price).

There is little question that, with two debatable exceptions, all the important participants in the post-Ricardian controversies of the 1820's and 1830's denied that commodities exchange in proportion to the quantity of labor embodied in their production. The two dubious cases were James Mill and McCulloch. Both claimed that Ricardo had gone too far in conceding to capital the capacity to influence exchange ratios, and that these were solely determined by labor. But a close reading suggests that they were both playing with words. They were concerned more with whether the words sounded as if everything was being attributed to labor rather than with the facts that the words described. They did not shrink from boldly changing the meaning of the word labor so that everything could be assigned to that word.[4] At

[2] Stigler distinguishes between the two positions by designating the cost-of-production theory as analytical and the labor theory as empirical. This may exaggerate, a little, the difference between them. If we ask the question of the cost-of-production theory that Stigler asks of the labor theory—did Ricardo believe that the relative values of commodities are governed exclusively by their cost of production?—we would have to answer in the negative for the analytical theory as well. For Ricardo believed that some commodities cannot be reproduced, some are monopolized, and so forth. On the other hand, he did not think these exceptions as significant, particularly for his purposes, as differences in labor-capital ratios. For most questions—but not all, as the foreign trade analysis shows—he used the cost-of-production model, and in this sense, he "believed" it.

[3] The reference is to a particular numerical example. Cf. *The Works and Correspondence of David Ricardo* (Sraffa ed.; Cambridge, England, 1951), Vol. 1, p. 36. Hereafter references to the *Works* will be by volume and page number only and included in the text. This 93% does not mean, of course, that at any point of time the relative price of commodities could not diverge from their relative labor contents by more than 7 per cent. Ricardo was only referring to changes in relative price caused by wage and profit fluctuations.

[4] Perhaps the most clear cut and flagrant is Mill's comment: "If the wine which is put in the cellar is increased in value one-tenth by being kept a year, one-tenth more of labor may be correctly considered as having been expended upon it." *Elements of Political Economy* (2nd ed.; London, 1824), pp. 97-98.

other points they were less concerned with the word labor, and turned their attention to the words regulate or determine. Mill, in particular, can normally be interpreted as arguing that if we hold interest rates, factor combinations, wages of different qualities of labor, and so forth, constant, then relative labor contents determine (but are not necessarily equal to the reciprocal of) exchange ratios. It is, of course, always true, and always trivial, that if we turn all variables but two in a system into constants, the one remaining exogenous variable can be said to determine the one remaining dependent variable.[5]

We have not the time here to follow McCulloch and James Mill through all their tedious and constantly shifting semantic arguments by which they strove to preserve the sound of their first principle, and fortunately it is not necessary. For nowhere, to my knowledge, did they clearly assert what I have termed the labor theory of relative price, and by their enthusiastic acceptance of Ricardo's theorem on the effects on relative values of fluctuations in wages and profits, they explicitly denied it. Moreover, from what we know of the close personal relationships among Mill, McCulloch, and Ricardo, we may reasonably infer that had a more than verbal difference existed among them, we would see more of it in their correspondence and in Ricardo's correspondence with Malthus. Certainly Ricardo did not believe his differences with either of his disciples were more than terminological. For he refers to McCulloch using "the word labor in a sense somewhat different to Political Economists in general" (Volume IX, page 377) and in the last letter of his life to Mill he writes: "*We all agree with respect to the facts,* but it is impossible to *say* that the value of commodities is proportioned to the quantity of labor employed upon them." (Volume IX, page 385; my italics.)

Having disposed of the two possibly controversial cases, we may quickly run through the remaining writers, largely by assertion. Ricardo's other followers accepted his nonlabor-theory position; some of his opponents, presuming, incorrectly, that he had a labor theory, criticized him on precisely that account.[6] I do not know of any interpretation of the classical period that has held Say, Senior, or Longfield to

[5] This I take to be the meaning of the passage: "The value of the first capital was regulated by quantity of labor; the value of that which was produced by the first capital was regulated by the value of the first; that, however, was valued by labor; the last, therefore, is valued by labor; and so on, without end, as often as successive productions may be supposed to be made. But, if the value of all capital must be determined by labor, it follows, upon suppositions, that the value of all commodities must be determined by labor." (*Ibid.*, p. 102.)

The case cited by Stigler, *op. cit.*, p. 363, may be interpreted, I think, in a similar manner. The same is true of the argument of the teenage John Stuart Mill. Cf. *The Measure of Value,* 1822 (Baltimore, 1936), pp. 19-20. Later, of course, Mill rejected even the verbal form of the labor theory of relative price.

[6] See Stigler, *op. cit.*

have had a labor theory of relative price. Mill, when he escape from the surveillance of his father, added a variety of additional deter minants to the Ricardian scheme. The so-called "Ricardian Socialists are likewise no problem. Despite a great deal of discussion over th importance of labor and the significance of the laboring classes t society, I can find among them no clear (or even obscure) statement c the labor theory of relative price. Finally, Marx is now acknowledge by all commentators to have specifically rejected the notion that com modities exchange in proportion to their labor contents. While this wa obscure in Volume I, it was made clear in Volume III and had, in fac been indicated in the *Theories of Surplus Value* written before Volum I was published.[7]

Finally, we should recognize the fact that most of the writers in th classical period occasionally considered a model in which they eith abstracted from the existence of capital or assumed that the rati between capital and labor was the same in all industries. The be known example of the first was Smith's "early and rude state of s ciety," a model which was briefly considered by a great number later writers. Of a similar nature is Ricardo's treatment of internation trade, where he rests his argument on his frequently expressed opinic that divergences from the labor theory of relative price are of litt significance in practice. Finally, Marx's analysis of Volume I presume that capital-labor ratios are the same in all industries. These cases c not disturb the general principle of the nonexistence of the labor theor of relative price, for in no case do they represent the complete model th economist in question.

In this brief survey we have searched for statements clearly rejectin or accepting the labor theory of relative price. We have omitted fro consideration a large number of statements by classical writers, stres ing, in some manner or other, the importance of labor, but from whic it is extremely difficult to derive any clear meaning. One of the be known examples is Smith's opening proposition: "The annual lab of every nation is the fund which originally supplies it with all th necessaries and conveniences of life."[8] Whatever he meant by this, is this type of remark—of which, of course, there are a great mar in Smith—that appears to have become the foundation of what wa more or less standard fare among the Ricardian Socialists. (The would have been better named "Smithian Socialists.") Thompson, f example, asserts: "Labor is the sole universal measure, as well as th characteristic distinction of wealth. . . . Without labor there is n wealth. Labor is its distinguishing attribute . . . labor is the sole pare

[7] *Histoire des Doctrines Economiques* (Paris, 1925), Vol. VI, pp. 254, 256.
[8] *The Wealth of Nations* (Cannan ed.), p. lvii.

of wealth."[9] And Hodgskin argued: "The *real price* of a coat or a pair of shoes or a loaf of bread, *all* which nature demands from man in order that he have either of these very useful articles is a certain quantity of labor."[10] (Hodgskin's italics.)

With a little ingenuity and imagination we may attribute meanings to some of these obscurities, and to assert what the author "was trying to do" or "in effect was saying." But while these exercises may be good for the imagination, the results are very difficult to document. Fortunately for our present purposes they are unnecessary. The very obscurity of their typical proposition that "labor is the sole producer of value" suggests that those authors could not have intended it to have the same meaning as the proposition that "goods exchange in proportion to their labor contents." For being tolerably literate men, the probability of their using so many incorrect or ambiguous words in succession—which would be necessary for them to intend the second but state the first—must be close to zero. Thus while I would not want to suggest that I understand these propositions, I think we may reject, with great confidence, the idea that they contain a labor theory of relative price.[11]

I conclude that the main economists of the classical period did not hold what I have termed the labor theory of relative price, and that whatever may be the true import of many of the assertions about labor, they do not entail acceptance of that theory. Parenthetically we should note that while there never was a labor theory of value in that sense of the phrase, it could not be rejected today for demonstrated lack of scientific respectability. It is, of course, an unrealistic theory in its assumptions, but in this era one would not expect it to be dismissed on that account. Whether it predicts efficiently is largely unknown for it has rarely been tried. But when tested a few years ago on the problem for which Ricardo used it—the explanation of commodity movements in foreign trade—it performed at least as well in that field as do many currently more popular (and vastly more expensive) models do in their fields. Whether it predicts usefully may be more doubtful.

Nonetheless, I believe there were theories that could properly be called labor theories of value in quite a different sense, and I shall briefly outline what I take these theories to be, in the works of three pre-eminent alleged labor theorists: Smith, Ricardo, and Marx. The common element in labor theories is the notion that an absolute number

[9] *The Distribution of Wealth* (London, 1824), pp. 6-7.

[10] *Labor Defended Against the Claims of Capital* (London, 1831), p. 75.

[11] They may be the equivalent of what I shall later term the labor theory of absolute value, in either the Smithian or Ricardian form. The principle we use in this case may be termed the "principle of the nonequivalence of simplicity and confusion," or, for brevity and obscurity, the "principle of nonequivalence." It is frequently useful in exploring some of the darker recesses of the history of economics, if one is searching for merely negative conclusions.

may be attached to any economic good, independently of any other economic good, and that these absolute numbers are either the labor time that the commodity purchases or "contains." It is essential in interpreting what may be called labor theories of absolute value to distinguish between these numbers and the quite distinct, albeit related, set of numbers represented by exchange ratios. This is true even in the case, as in Smith, where the ratio between any two of the absolute numbers necessarily equals an exchange ratio. It is, perhaps, even more essential to recognize that all labor theories are normative proposals—they have that philosophical standing whether or not their authors were conscious of it. They are not normative in the simple sense of specifically advocating that all product should go to labor, but in the more general sense in which all proposals of units of social accounting are normative.

In the *Wealth of Nations* this notion of absolute value is developed in the chapter, "Of the Real and Nominal Price of Commodities, or of Their Price in Labor and Their Price in Money."[12] In that chapter, among other things, Smith proposes to assign an absolute number to every commodity, the amount of labor time required to purchase it, on the grounds that there is a certain constancy in the pain cost, or psychological disutility, of an hour's labor:

> Equal quantities of labor at all times and places, may be said to be of equal value to the laborer. In his ordinary state of health, strength and spirits; in the ordinary degree of his skill and dexterity, he must always lay down the same portion of his ease, his liberty and his happiness. The price which he pays must always be the same, whatever may be the quantity of goods which he receives in return for it. Of these, indeed, it may sometimes purchase a greater and sometimes a smaller quantity; but it is their value which varies, not that of the labor which purchases them.[13]

Smith usually calls the absolute value of a commodity "real price," sometimes "real value." It serves a somewhat similar function for Smith that modern welfare economics does. It enables him to estimate whether an individual or society is better off over changes in time and place.

For Ricardo, the absolute value of a commodity is the "difficulty or facility" involved in its production (Volume I, pages 273, 277, and Volume II, page 34). Most often he refers to it as "real value," sometimes as "absolute value" (Volume IV, pages 357 ff.) and occasionally as "positive value" (Volume IX, page 2). It is contrasted with "exchange value" or "relative value" which are terms for relative price. It is a cost theory of absolute value in the sense that it is a proposal to use the number of inputs in a commodity as a unit of social accounting. It is not a cost theory of relative price in either the sense that the long-

[12] I have found the best interpretation of this chapter to be that of Professor V. W. Bladen in "Adam Smith on Value," *Essays in Political Economy* (Toronto, 1938), pp. 27-43, and I have followed many of his suggestions.

[13] Smith, *op. cit.*, p. 33.

run price will equal money cost, conceived as constant with respect to output (which he also held); nor is it a cost theory in the sense that the relative values of commodities reflect Marshall's real (psychological) marginal disutilities.

The celebrated "measure of value" is a proposal to measure absolute value by observing exchange ratios. If among a class of commodities, all of which have a constant proportion of capital to labor, there is one single commodity whose inputs per unit of output never change through technological progress, that commodity is a perfect measure of the absolute value of all other commodities of that class. Why? Because for any one of them, observed exchange value (or relative price) in terms of the measure will change precisely in proportion to any changes in the inputs required to produce it; or, in other words, in proportion to its absolute value.[14] Further, changes in wages and inverse changes in profit rates will not produce any fluctuations in relative price between this measure and others of its class that would lead us to believe that a change in absolute value had occurred when in fact it had not.

Of course, commodities vary from one to another in the proportions of labor to capital involved in their production; so Ricardo had to choose as a measure of value a commodity with an average ratio of these factors. In terms of this commodity, some commodities would rise and some would fall when wages rose and profits fell. Relative values would change while absolute values stayed constant, and this would be an imperfection in the measure; nevertheless, it is the best available. The commodity with an average ratio of capital to labor is not chosen so as to create an index of general purchasing power among the mass of commodities; it is to minimize the fluctuations in exchange ratios with the measure when wages rise and profits fall. A perfect index of general purchasing power may, in fact, be a poor measure of value, for it overlooks the fact that the value of all commodities may fall (Volume IV, page 400).

The notion of a general fall in the value of all commodities would, of course, be nonsense if by value he meant relative price. The major part of Ricardo's writings on value, including the never ending discussion of the measure of value, would likewise be meaningless. Without absolute value there is nothing to measure.

But if we try to discover whether Ricardo meant by "difficulty or facility of production" the quantity of labor alone or the quantity of labor and "waiting," the answer is not obvious. He speaks occasionally of "capital and labor" as the determining items (Volume I, page 18 and 50) and he replies to Malthus' accusation that he confuses cost and

[14] For this problem Ricardo assumed no changes, autonomous or induced, in the ratio of capital to labor.

value, that Malthus is correct only if cost includes profits (Volume I, page 47; Volume II, pages 34, 101). Finally, on one occasion, at least, he refers to the quantity of labor and time as the determinants (Volume IX, page 304).

On the other hand, there is strong evidence that Ricardo regarded labor, with respect to absolute value, as not only quantitatively the most important, but qualitatively different—probably because of his view of its pain cost as opposed to mere "time." The problem, to repeat, is not one of determining empirical fact or logical deduction, but of normative definition. While in discussing relative price, he sometimes neglects to mention capital. When he turns to absolute value, it is in the overwhelming majority of cases, that he mentions labor alone, and in emotive language that he never applies to capital (e.g., Volume IX, page 397). Moreover, where he refers to capital and labor as determining absolute value, capital probably means, as it often does, merely accumulated labor rather than waiting. Even the proposition that "real value" includes profits and wages (Volume II, page 34) is not conclusive. For real value is estimated (but not defined) by the exchange rate between a commodity and the measure of value; and this relative price must include all costs, even if it were being used to estimate the quantity of one input alone.

Thus apart from the single (so far as I know) mention of time (quoted above) there is virtually no evidence that "difficulty or facility" of production is not defined in labor alone and convincing evidence that labor is qualitatively or normatively of special importance. In almost his last writing on the subject, and in the only place (so far as I know) that he refers to "what I *mean* by the word value" (Volume IX, page 397, my italics), he comes as close to a formal definition as he ever does; but he does not mention profits or waiting, and he dwells glowingly on the significance of labor. The theory of absolute value, if not of relative price, appears more than a 93 per cent labor theory.[15]

The function of absolute value in Ricardo's system is to enable him to discuss the shares of the factors in the total product. In his earlier essay on rent (Volume IV, pages 1-41) the shares had been conceived of as being distributed in a homogeneous product, corn. In his *Principles* he wanted to talk of wages and profits in terms of a homogeneous substance, and (absolute) value serves that purpose.

[15] Whatever the definition of the inputs that defines absolute value, it is estimated by the measure of value. In all cases it will be imperfect when wages rise and profits fall, but will be accurate when inputs fall. If we use the measure to estimate the aggregate value of a group of commodities at a point of time, then in both cases it will be a rather crude index (but with different weights in the two cases) of what it is designed to measure. But if we compare Ricardo's measure with the relationship between points on a social preference function (if one could be designed to satisfy our current values) and net national product, the superiority of the one or the other is not obvious.

When we turn to Marx the labor theory of (absolute) value is much more straightforward and distinct from relative price. Whatever the phrases such as the "substance of value" meant in Marx's mind—in particular, whether it referred to the social (moral?) relationship between men—his value is logically equivalent to calculating production by counting inputs of labor time. This means that by normative definition labor produces all value and is "exploited."

If the labor theory is one of absolute value, great confusion can arise from attempting to see in that theory an alternative to the modern theory of relative price. It was not concerned, as is the latter, with the logical derivation of solution values, in a rigorously defined model, possessing some empirical reference. In all three cases of the labor theory the assigning of absolute numbers to economic goods was for the purpose of making numerical comparisons that involved value judgments. It should be obvious that any unit of social accounting, such as the present-day national product, involves similar value judgments. Production even at its most "physical" only involves moving matter around, and when we propose rules for counting the total product of an economy, we are proposing value weights for the different components —components that had quite as much physical content before as after the alleged production. The current custom of using relative prices as weights is merely one, among a possibly large number of "reasonable" normative proposals, to add up to what we stubbornly, but misleadingly, call physical production. The labor theory is another.

Without going deeply into the fundamental philosophical standing of value or normative propositions, it is clear that they cannot be rigorously deduced from non-normative axioms, nor can empirical evidence be brought to bear on them in the usual sense. Modern critics, steeped in the logico-empirical tradition and approaching the labor theories with the empirical generalizations and clean theorems of the modern theory of relative price in mind, tend to dismiss them as hopeless jumbles of confusion. Even if more sympathetic they tend to suspect a large metaphysical component is included in the labor theory of value. This is true, but in somewhat the same sense that the index of industrial production has, likewise, a metaphysical element.[16]

The normative nature of the labor theory is clearly seen in the character of the defenses put forth by its proponents. Smith can only claim that labor time "may be said" to have always equal value to the laborer; he proceeds to appeal to our intuitive feeling of pain cost and

[16] A recent writer comments on Ricardo's concept of absolute value: "But there is nothing metaphysical in this: absolute value is simply a unit of social accounting." Marc Blaug, *Ricardian Economics* (New Haven, 1958), p. 36. I should say, rather, that there is something metaphysical in this because it is a unit of social accounting.

continues with more poetic assertion. Malthus adopted Smith's constant, but without apparently catching sight of the intuitive appeal to pain cost, and in his interminable discussions with Ricardo can only assert and reassert the constancy of the value of labor. But Ricardo in turn can only point to its fluctuations in relative price, which is irrelevant to the Smith-Malthus definition; he objects primarily to the "language" of his opponents; and he likewise can only iterate and reiterate—with occasional dramatic effects (e.g., Volume IX, page 397) —that value can only mean the toil and trouble of acquisition. This is not an argument of logic or of empirical evidence.

Marx, on the other hand, perhaps because of his background in Hegelian philosophy, attempts a proof of the labor theory[17]—a proof which is a travesty of logic. Of the various fallacies that make up this proof, the most egregious is the attempt to establish a fact (or a value proposition) from the definition of a term (the equality sign). But while Marx's proof of his labor theory of value is nonsensical, it is not because the labor theory is formally invalid or empirically false, and it would be quite as nonsensical to attempt a proof of its invalidity.

The failure to mark the essential difference between a logico-empirical theory of relative price and a normative theory of absolute value has been a rich source of confusion in the commentaries. Smith has been accused by the critics of having three theories of one phenomena: a labor cost theory, a labor command theory, and a cost-of-production theory. In fact, he has a definition of "better off," a primitive model of relative price, and a civilized cost-of-production model of relative price.

Ricardo's two closest disciples, McCulloch[18] and Mill,[19] clearly recognized his distinct theories. Beginning with Bailey,[20] however, what may be called the orthodox critics subjected Ricardo's discussion to analysis in terms of their own relative-price definition of the word value; and if critical, they found much to criticize in Ricardo's use of terms. These commentators, believing him to be analyzing relative price, have frequently mistaken his emphasis on labor, when speaking of absolute value, and have ascribed to him a labor theory of relative price.[21] The Marxist writers have on the whole been superior in recognizing in Ricardo a certain duality with respect to the term value, but

[17] *Capital* (Modern Library ed.), pp. 43–45.

[18] *Principles of Political Economy* (4th ed.; Edinburgh, 1849), pp. 315 ff.

[19] *Elements of Political Economy* (3rd ed.; London, 1826), pp. 73 ff., where the precise distinction is drawn that was blurred in the first edition (London, 1821), p. 59.

[20] Samuel Bailey, *A Critical Dissertation on the Nature, Measures and Causes of Value, . . .*, 1825 (London, 1931).

[21] To the methodological naïveté that Stigler credits with producing the misinterpretation of Ricardo's theory of relative price (cf. Stigler, *op. cit.*, p. 366) I would add, with perhaps equal weight, the confusion over relative price and absolute value and Ricardo's differential emphasis on labor between them.

they have generally looked upon absolute value and relative price as two aspects of, or two approaches to, the same phenomena.[22] They have, in interpreting both Ricardo and Marx, failed to mark the radical distinction between normative judgments and theorems derived from a model.

It should be unnecessary to add that we cannot discuss the "validity" of these labor theories in the usual sense; but we can compare them with our own intuitive judgments. The Smith version of the labor theory —that an hour's labor may be viewed as somehow possessing, via disutility or otherwise, a constant amount of moral weight—is broadly accepted by the unreflecting common sense of the contemporary world. If this were not true, we would not be exposed, as we now are, to brief tables showing the number of minutes required to earn a loaf of bread or a pair of shoes in the Soviet Union and the United States (and which, provided we are not too careless in choosing commodities, show us that we are better off). Even the sophisticated find it hard to resist the idea that there is some normative significance in the fact that for so many commodities an hour's labor buys so much more than it did in 1900.

On the other hand, the Ricardo-Marx labor index method of measuring total output does not have the same intuitive appeal. They were interested in distribution, and this was defined in terms of the shares of society's labor inputs that went to labor or profits out of a total that, by definition, could not increase. How neatly did Ricardo unwittingly provide the conceptual framework for Marx's class struggle! The modern mind cannot help but feel, with Smith, that the purchasing power of an hour's labor is a more significant variable.

[22] The same is true of the famous distinction that was originated by von Wieser (cf. *Natural Value* [New York, 1956], pp. xxvii-xxx) and used by Whitaker (cf. A. C. Whitaker, *History and Criticism of the Labor Theory of Value* [New York, 1904]) between "philosophical" and "empirical" approaches to value in Smith and Ricardo.

THE RELEVANCE OF CLASSICAL AND CONTEMPORARY THEORIES OF GROWTH TO ECONOMIC DEVELOPMENT

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Einstein once observed that the only justification for our system o: concepts is that they serve to represent the complex of our experiences; beyond this they have no legitimacy.

Britain's economic development has often been discussed in terms o the classical theories of economic growth. The problems of newly de veloping countries are now being posed in terms of the contemporar theories. But for many countries key problems of economic developmen are inextricably linked with the performance of the major industria nations—performance which in itself is related to the nature of thei past economic growth. I should therefore first like to examine how well or badly, some of the important propositions of the classical and con temporary theories apply to past experience. This will require a brie presentation of some of the salient elements in the economic develop ment of Britain, Western Europe, and the United States. Then, we wil appraise the relevance of the theories in terms of the present-day com plex of economic development.[1]

I

From the 1780's to the 1850's, Britain's economic growth was botl concentrated and rapid, yet she maintained a satisfactory degree o internal and external balance. Her gradual social, political, and economi development from the 1550's to the 1780's was doubtless an importan condition for the more rapid industrial expansion which occurred in th late eighteenth and nineteenth centuries. What marks off the economi history of Britain in the earlier period (1550-1780) from that of he Continental neighbors is both the extent of general economic develop ment, with much investment in "social" capital, and the difference i the kind of industry, such as engineering, which developed. Britisl agriculture obtained a new technological base during these centurie and this served as an essential prelude to the industrial revolution. Con sequently, at the beginning of the eighteenth century the economi structure of Britain was predominantly self-sufficient. Exports wer

[1] In compliance with the request of the editor, virtually all footnotes have been omitte from this paper. Bibliographical references and statistical materials upon which the argumen in the first section of the paper is based can be found in my book, *Balance of Payments an Economic Growth* (Harper and Bros., 1959).

based on the utilization of plentiful indigenous resources. As the eighteenth century evolved, industrial advance became most marked in the producers' goods industries: in the means of transport, the output of coal, iron, copper, cotton and woolen yarn, and other semifinished products.

From 1781 to 1913 the rate of growth of Britain's industrial output measured in terms of the average percentage increase per year was, according to Walther Hoffmann, approximately 2.8. From 1820 to 1860 it was as high as 3 per cent; but in the years immediately preceding World War I it was only about 1 per cent. Such rapid and changing rates of economic growth had striking effects on, and were interdependent with, Britain's international specialization; it affected the structure, the terms, the volume, and the direction of her foreign trade.

Domestically, the rapid industrial expansion which began in the 1780's is what most of us, whether justifiably or not, are in the habit of labeling unbalanced economic growth. It centered in manufactured consumer goods, primarily textiles. The increasing domestic supply of coal and iron, the emerging entrepreneurial-labor milieu, the growing home and foreign markets, the expanding demand for imports of abundantly available cotton, wool, and flax—all were interrelated in enabling Britain to acquire a very satisfactory industrial complex for the kind of economic development and foreign trade that she undertook. In effect, Britain's resource endowments, economic growth, and foreign trade were in reasonably good balance.

After Britain's industrial revolution had been underway for several decades, her growing need for foodstuffs and industrial raw materials to feed her expanding population and growing manufacturing industries was reflected in her balance of trade. It is now considered to be clear that Britain's import surpluses did not begin with the freer trade policies which were launched in the 1840's, but preceded them by many decades. While the volume of imports and exports did not increase at equal rates throughout the period, the average annual percentage rate of change from 1793 to 1847 was very close. The balanced rate of growth between imports and exports for the period as a whole (with the absolute value of imports exceeding that of exports) was a stabilizing force for other countries as well as for Britain. As her economy developed, Britain's rate of economic growth was held in check by domestic and foreign conditions—at home by her relatively limited resource base at existing levels of technology; abroad by the extent of the market.

All the indices of the rate of growth of production and trade were higher during the peaceful period of 1815-50 than during the Napoleonic Wars. Technological progress and expansion were the principal features

of the era: domestic investment increased rapidly, real costs fell, and the volume of production rose at an unprecedented rate.

Though Britain was well endowed with key industrial raw materials for her economic growth, she was relatively poor in agricultural resources. Between 1815 and 1847, production of wheat, coal, and iron rose. The price of wheat rose relatively to the price of coal and iron (the prices of all these products fell). However, the production of wheat rose at a much slower pace than that of coal and iron, indicating that relative changes in costs were making it comparatively unprofitable for British agriculture to expand crop production. Even when the home price of wheat was rising, increased costs of production checked the growth in output. Britain's disadvantage in producing crops such as wheat was made abundantly clear by the very rapid increase in imports which occurred after the drop in duty in 1846. By the beginning of the 1850's, imports of wheat had reached 20 per cent of Britain's production, and eventually they exceeded domestic output. Diminishing returns in the production of grains appeared to have manifested themselves in two ways. First, there was a tendency toward reduced output per unit of input as production expanded and natural resources of lower quality were brought into use. This, however, was not of major significance. Technological advance apparently offset somewhat the deterioration in the quality of marginal agricultural resources as rising output pressed on available land. Much more important was the second impact of diminishing returns: it had the effect of restricting the expansion of crops whose output could be increased only at sharply rising costs. The tendency toward historical diminishing returns revealed itself not so much in absolute lower efficiency but in relatively lower expansion of output. For Britain, in other words, the relative mechanization of industry had made further expansion of agriculture less profitable than that of manufacturing.

Britain's total home production of foodstuffs reached a level in the 1850's which was seldom surpassed before World War II. The production of crops actually declined in the second half of the nineteenth century, clearly attesting to Britain's comparative advantage in other fields.

In the aggregate, the absolute volume of Britain's raw material imports was closely correlated with the level of industrial production. Rising levels of income of larger sections of Britain's population generally resulted in an expansion and diversification of her imports. The importation of finished manufactures increased steadily from the 1830's and in relation to total imports grew from about the 1840's. Similarly the proportion of "luxury" foodstuffs declined and the proportion of mass-consumed foodstuffs increased. These developments were gradual

and quite continuous. But they, too, showed up markedly with the spread of Britain's mechanization and the rise in real incomes during the period of fundamental tariff reforms between 1842 and 1860. They were especially accelerated after the completion of her free-trade policy.

The *modus operandi* of Britain's economic development may be further checked with respect to domestic production and exports. In the first half of the nineteenth century, finished manufactured articles constituted about 80 per cent of the volume and 90 per cent of the value of domestic exports. Moreover, throughout the period 1793-1847, Britain's volume of domestic exports (and the volume of total imports) grew at a more rapid rate than the volume of her total production. Foodstuffs as a proportion of total home-produced exports fell rapidly, whereas the proportion of raw materials rose throughout the period. Although Britain's economic growth was domestically unbalanced, she was relatively well endowed with some of the most important raw materials required for the kind of economic development which she pursued.

Britain had to rely on her own resources to bring about rapid economic development. The capital required was primarily created by the act of domestic saving and investment through the plowing back of profits by merchants and manufacturers, with substantial contributions from the nobility and gentry. The increased labor needed in manufacturing, the collieries, transportation, and so forth, was provided mainly by the natural increase in population. There was, of course, some exodus from agriculture and from domestic services which assisted the process of economic growth. But the rapid pace could not have continued had Britain not supplemented her domestic resources with imports. Nevertheless, Britain's economic development is no exception to the general rule that it is home resources and domestic materials which must chiefly be relied upon to effect industrialization, simply because so much real capital is immovable in international trade.

The intensive economic development of Britain during the first half of the nineteenth century was to be matched only by the extensive economic development of the United States, and both forces strongly influenced the terms of trade. The tremendous decline in Britain's export prices from 1798 to 1850 can be attributed primarily to the rapid application of cost-reducing machine methods of manufacture in the major export industries. In no export industry did prices fall more rapidly than in cottons, where the new techniques were most extensively applied. The decline in export prices resulted also from extensive development in the growth of cotton in the United States during the 1820's and 1830's. However, cotton costs were only about 20 per cent of the total cost of finished fabrics. Since the price of finished fabrics

fell by much more than 20 per cent, the decline in Britain's textile prices must be accounted for principally by the technological revolution.

In neither America nor Europe at this time were improvements and mechanization in food production on a scale comparable to those in textiles. Though diminishing marginal productivity in agriculture, for a given resource complex, was more than offset by historical increasing returns brought about by the expanding supply of resources and improving techniques, the price of foodstuffs (particularly wheat) fell slowly from 1820 to 1850. As people moved into new agricultural lands in America, labor became relatively scarce, its earnings rose, and this probably prevented agricultural foodstuff prices from falling by as much as the price of cotton. These factors contribute to an explanation of the fall in Britain's net barter terms of trade. But, primarily, the explanation lies in the enormous expansion and technical improvements which took place in her major export industries. With increasing productivity, comparatively stable money wages, and rising real wages on the one hand and with growing demand for her manufactures on the other, the fall in Britain's export prices was a reflection of the improvement in her single factoral terms of trade.

As regards gains from trade, Britain's export-gain-from-trade index rose from 8 in 1798 to 10 in 1818 and to 35 in 1850. The greatest gain was actually made when Britain's export prices were falling most rapidly (i.e., from 1818 to 1850). Britain's total-gain-from-trade index rose from 12 in 1798 to 13 in 1818 and to 33 in 1850. Deterioration in net barter terms of trade, under the prevailing circumstances, was clearly consistent with improvement in national welfare.

As we shall have occasion to observe, the relevance of this record to the classical theories of economic growth lies in the fact that just as the developing structure of Britain's exports and imports was at this time complementary with her needs and resources, so was it complementary with the needs and resources of the newly developing countries in Europe and abroad.

The impact of Britain's mechanization and free trade brought about an international redistribution of the factors of production. Those persons engaged in sectors of British (or German) agriculture, which had been adversely affected by these developments, found an outlet in migration. They either left, or were driven out, by the force of agricultural famine and free trade; by the related pressure of increased mechanization in manufacturing which had raised real wages, generally, and thereby rendered their occupations in agriculture relatively uneconomic and less competitive; and by the growth in numbers which had encountered difficulty in being absorbed at the higher wage rates into the manufacturing industries. Furthermore, periodic diminishing

returns on British investment at home reduced the rate of new investment and, consequently, increased the amount of unemployment. Both factors, related as they were, brought on spasms of foreign investment and emigration.

The men who came to America transported Western tastes, experience, and techniques. They served as the business medium and catalytic agent in Anglo-American economic growth. If they helped to produce American goods for the British market, they also increased the demand for British exports.

Later in the century, as the flow of migrants increased and provided a pool of cheap labor, a corps of driving American entrepreneurs, imbued with the spirit of innovation and mechanization, and a small elite of highly skilled machine-tool makers brought about a marked increase in the productivity of labor by incorporating their efficiency into the machines. The process of comparative mechanization, free trade, and migration of labor and capital at first contributed to international economic balance, but it carried with it—on both sides of the Atlantic—potential seeds of international economic imbalance.

The first country to undergo the industrial revolution, Britain became dependent at an early stage upon large imports of foodstuffs and raw materials from some regions whose climate and resource structure probably gave them an absolute advantage in the production of these goods. Britain's imports came for the most part from India, China, Africa, the Baltic, the northern countries, Russia, central and southern Europe, the West Indies, and America. The gradual economic development of European countries and, later, the United States enabled them to expand their exports of foodstuffs and raw materials to Britain. For, as they progressed in their economic development, their comparative cost advantage at first became marked in these fields.

The rapid economic development of industrial Europe in the 1850's and 1860's, in turn, began to affect the composition of industrial Europe's imports of foodstuffs, raw materials, and manufactures. As these countries obtained comparative cost advantages in manufactures, advantages which were usually associated with rising real wages and increasing mechanization in both agriculture and industry, they expanded their imports of foodstuffs and raw materials from countries whose resources were either generally better suited for primary production and/or from countries which were, as yet, at a lower stage of economic development.

The further one traces the chronological sequence of economic development back to the industrial revolution, the closer seems to become the relationship between the economic development of an area or country in question and the emergence of its import surpluses from areas

or countries at lower stages of economic development. Important exceptions to this pattern can be cited. Staggered patterns of export-import relations between specific creditor-debtor countries arose, but generally the process appears to emerge. It is not inconsistent with a priori reasoning, though it does not necessarily follow from it.

In the case of Britain, the early start in economic development, her singular suitability to supply the foreign demand of less developed areas, the rapid improvement in her single factoral terms of trade, the comparatively small capacity of British industry in the aggregate to absorb capital (after the railroads had been built and before the utility industries became large), the growth in her invisible exports, her military and diplomatic prestige, the political and personal ties with many regions of recent settlement—all contributed, first, to expand British foreign investment and, then, to utilize the proceeds from foreign investment on further investment and for merchandise import surpluses.

These forces operated in a setting of mutual support and causation under ever changing conditions of cumulative growth. To the extent that Britain's foreign investments were made on the basis of higher marginal efficiency of capital abroad than at home, the over-all size of her merchandise import balance was the result, *inter alia,* of market-directed forces of economic growth. But in a multilateral trading world, with no tied loans, this does not necessarily imply import surpluses with specific countries in which foreign loans are made. Decisions to make investments abroad usually are made by different people and for different reasons than decisions to import from abroad. There appears to be no fundamental structural reason why more developed countries should, in all cases, have import surpluses from less developed ones, or conversely. In the case of Britain, however, institutional, political, and commercial policy forces became so causally interrelated with the cumulative economic and financial forces that decisions to invest abroad and decisions leading to merchandise import surpluses from Continental Europe, the United States, and the regions of recent settlement were rendered quite consistent with one another.

Although productivity in British manufacturing kept increasing, the demand for capital at home did not rise rapidly after the mid-1870's. Domestic net capital formation amounted to 8.7 per cent of net national product in the 1870's, 7.4 per cent in the 1880's, and 7.9 per cent in the 1890's. The ratio of Britain's reproducible capital to annual national income was as high as 4.6 in 1865. It was approximately 5.3 in 1875 and 5.5 in 1885. Given such relatively high capital-output ratios, coupled with Britain's unbalanced resource structure and limited resource base on the one hand and the consistently high marginal effi-

ciency of capital in the regions of recent settlement on the other, Britain's investors were nearly always able to find profitable outlets for their savings whenever the marginal efficiency of capital at home tended to decline. Extensive loans were made in the regions of recent settlement without outrunning the exceptional advantages to invest. As soon as one area appeared to be yielding diminishing returns, another would be opened up, while investment in the first was absorbed in preparation for the next advance. It was a fortuitous historical circumstance that Britain was able to invest much of her excess savings abroad whenever plans to invest at home declined relative to the level of total savings. A cumulative process of foreign lending was set into motion—not a smooth, but a continuous, process.

Around 1870, an important interrelated phenomenon occurred in Britain: a turning point from a high to a lower rate of capital formation and from a high to a relatively low rate of increase of industrial output. From 1865 to 1875 physical industrial capital per head rose by as much as 35 per cent, but the rate of growth of industrial output had already begun to decline. It seems that a disparity developed between the growth in physical capacity to produce of some major industries and the growth of the current output of their mines and factories. Industries had expanded production capacity beyond the need of current operations. Profits as a percentage of national income were lower in 1872, and nearly so in 1873, than in any other year during the period 1871 to 1913. Savings as a per cent of national income reached a major peak between 1872 and 1874—a peak which was not surpassed in the pre-World War I era.

As the rate of growth of industrial output declined in the early 1870's relative to the rate of growth of productive capacity, the net export of capital greatly increased. In effect, an examination of the data for the period 1870 to 1895 reveals that in practically every year when the volume of domestic investment fell or remained the same, the volume of foreign investment rose. Both in absolute terms and as a percentage of net national product, Britain's foreign investment and home investment moved in opposite directions over the long period. Recurring declines (and probably reduced elasticity) in the marginal efficiency of capital schedule at home impelled investors to seek better opportunities for the supply of their savings abroad.

As regards the demand for savings, throughout the period 1870 to 1913 foreign investment offered higher returns than most home investment, and the difference in returns turned out to be more than sufficient to compensate for extra risk.

One can infer from the evidence that, *inter alia*, the growth of domestic investment as a percentage of net national product periodically

generated a rate of growth in income which, in turn, generated a rate of growth in savings (as a percentage of net national product) larger than that of planned investment; and, at the going or anticipated rates of return, these excess savings could be invested more profitably overseas.

So far as Britain was concerned, it was the same set of domestic forces that often, on the one hand, brought about a reduction in the volume of domestic investment and, on the other, provided the incentives for an expansion in the volume of foreign investment, migration, and exports. The growth in Britain's capital stock would lower the marginal efficiency schedule of investment, as insufficient innovations were introduced to raise it. The returns on capital and expected returns on new investment would thus decline, the growth process be interrupted, full capacity supply be in excess of the total demand for the net national product, output would fall, and labor become unemployed. Concurrently, with higher levels of return on investment abroad, the decline in the marginal efficiency of investment schedule at home would bring on spasms of foreign lending.

Technological improvements and changing demands kept altering the relation between a country's economic development, fixed investments, and resource base, on the one hand, and the direction and composition of its trade and investments, on the other. From the middle of the nineteenth century to the outbreak of World War I, Britain's exports of all home products to agricultural countries had increased fivefold; her exports to industrial countries had increased only threefold. Britain's manufactured goods showed a considerable decline as a proportion of her total exports. A process of fundamental change also took place in the nature of Britain's imports. Especially after the 1890's, the proportion of imported raw materials to be used in the manufacture of producer goods increased in comparison with the proportion to be used in the manufacture of consumer goods. Many of the raw materials required for the expanding industries either were not produced in Britain or were produced in inadequate amounts. The process gained momentum between World Wars I and II; Britain suffered, not only from the fact that her most important manufactures—textiles—faced a reduced demand and were less competitive in world markets, but also from the fact that she was not as well supplied domestically as were other industrial countries with raw materials required to produce the new goods which were increasing in world demand.

From about the end of the 1890's until the outbreak of World War I, there seems to have been no clear relationship between fluctuations in Britain's home and foreign investment. Foreign lending assumed an independent cumulative tendency. Certainly from 1902 to 1913, foreign

investment kept rising while home investment experienced considerable fluctuation.

Britain's foreign lending therefore provided a most important stabilizing factor both for Britain's internal economic growth and for international economic equilibrium. Although foreign lending somewhat intensified periods of boom, it dampened the severity of British depressions and the intensity of their international propagation. Hence it helped Britain to maintain a high level of exports rather than to suffer from mass unemployment and to maintain a high level of imports rather than to spread severe depressions. One cannot overemphasize the fact, however, that this operation of foreign lending as an internal and external "automatic" stabilizer, assisting economic growth or restraining decline, was largely the product of historical circumstance: the higher marginal value product of capital abroad than at home, which was permitted to work itself out not with unmixed effects in a liberal political environment.

Once the pattern of Britain's investments, interest and dividend returns, and export and import surpluses became established, it sparked a chain reaction. Britain's excess of imports over exports from industrial Europe helped finance industrial Europe's excess of imports over exports from countries at a lower stage of economic development. This general pattern—an excess of imports over exports by more developed economies from less developed ones—greatly contributed to the comparatively smooth functioning of the balancing process. But the economic growth of the United States broke the sequence of this development. At the very time when Britain was consummating her pivotal position in the network of world trade, the United States had grown in economic power to replace her in that position.

As regards the forces working within the United States, there appears to have been a tendency between World Wars I and II for production to rise faster than domestic expenditure. The available evidence demonstrates convincingly that (potential) "full-capacity output" was in substantial excess of actual output, not only during most of the 1920's and 1930's, but even in times of the business cycle peaks. Since consumption is a more stable (i.e., dependable or predictable) constituent of output than is investment, the growth of excess capacity over the long pull may imply that either the rate of new investment was not large enough and/or structural adjustments not rapid enough to generate a sufficiently high equilibrium rate of growth in national income.

In a dynamic economy, a tendency toward excess capacity intensifies efforts of producers to sell their current products and introduce new ones in order to utilize that capacity. This may help to account for the

more pronounced role of salesmanship in the United States than elsewhere. However, when efforts at home fail to achieve a reasonable (i.e., profitable or expected) degree of balance between full-capacity output and domestic demand for final products, producers may be expected to intensify their efforts to expand sales abroad. The lower the level of domestic demand in relation to full-capacity output, the greater would be the pressure to cut prices and expand exports. If, on the other hand, prices are lowered abroad in order to stimulate sales in the United States and thereby check a deficit, the greater the volume of excess capacity in the United States the more American producers would be inclined to cut prices or petition for import restrictions to meet or counteract foreign competition.

In the case of Britain, when a disparity developed between the growth of full-capacity output and actual output, the economy found profitable outlets for its excess saving overseas and, hence, was able to maintain a comparatively high volume of output and trade. In the United States when, among other factors, the growth of domestic investment as a percentage of net national product periodically tended to generate a rate of growth in income and an excess of planned saving over planned domestic investment, there was no foreign outlet for the excess of planned saving over planned domestic investment in the way that was prevalent in Britain before World War I. The returns on domestic capital would thus decline, the growth process be interrupted, full-capacity output be in excess of actual output, actual output be in excess of total demand, production be curtailed, labor become unemployed, and the pressures to expand exports and reduce imports would become overwhelmingly strong.

The sheer weight of American depression would reduce the marginal efficiency of capital in countries closely knit to the American economy. On the other hand, no strong and stable long-term tendency to export capital from the United States could be expected. The comparatively balanced rate of growth of American factor supplies coupled with technological improvements appear to have checked any secular tendency in the United States toward diminishing returns on capital. Hence, in the interwar period, the over-all marginal value product of capital in the United States and expectations as to its long-term trend were in all probability higher than in most other industrial countries as well as in many regions of recent settlement and the tropics.

As a consequence, during periods of depression (and to a smaller degree during a recession) long-run forces of economic growth, structural maladjustments, and cyclical fluctuations became powerfully linked in bringing about international disequilibrium.

II

On the basis of this experience, let us now appraise the relevance of classical and contemporary theories of growth to economic development.

Adam Smith implicitly made an important contribution to the analysis of economic development by discussing it in terms of general economic principles rather than in terms of *a* theory of economic development. It is conditions, he wrote, that bring about systems of political economy; although he doubtless believed that advance in political economy could also bring about changes in conditions. His famous illustration of hunting deer and beaver represents a landmark in interpretive, as compared with predictive, economic analysis. Smith drew attention to the limits of what is possible, and impossible, for a country to produce in a certain period of time with given technology and resources. In addition, by introducing the restraint of given tastes, he formulated in simple terms the nature of all problems of economic maximization.

Furthermore, in his discussion on the division of labor, digression on silver, accumulation of capital, and different progress of opulence in different nations, he dealt with changes in wants, resources, and technology. Such problems, Smith considered with a sense of the uniqueness of human experience. They belong to the high theme of "historical" or "evolutionary" economics.[2] Emphasizing the importance of specialization to an extent that nobody had ever done before, Smith imputes to it not only the improvement of skill, dexterity, and judgment, as well as the saving of time, but virtually all technological progress and even the expansion of new investment. It will be recalled that he attributed division of labor to a certain propensity in human nature, and its development to the gradual expansion of markets. The nature of agricultural production—primarily because of its geographical dispersion, seasonality, and perishability of products—he considered to be less conducive to division of labor than the production of manufactures. For economic development to occur at all, however, Smith stressed that an "agricultural surplus" to support the nonfarm population was a primary requisite. He conjectured that the process of economic development must have been something as follows: Given an extremely favorable labor/resource ratio, clothing and housing were at first "free goods." As population grew, they became scarce and yielded a rent. This induced technical improvements, and they were applied to agriculture. A smaller proportion of the labor force was thus required to produce food. Consequently, workers were freed for other occupations.

[2] See Frank H. Knight, *On the History and Method of Economics* (Univ. of Chicago Press, 1956), p. 55 note. Cf. also his "Ricardian Theory of Production and Distribution," *ibid.*, Chap. 2.

It was the creation of an agricultural surplus that produced the demand for other goods and services which could be purchased with the excess supply of agricultural products. Manufacturing industries developed to supply this growing demand. Interdependently, the rising urban population required more food and had to produce an increased supply of manufactures to pay for it. Since Smith assumed that the division of labor in manufacturing is greater than in agriculture, he maintained that manufacturing output would rise more rapidly than agricultural output. Foreshadowing the nineteenth-century belief of decreasing returns in agriculture and increasing returns in industry, he reached the Ricardian conclusions that as a result of economic progress landowners would benefit directly for two reasons: The real value of agricultural products would rise and landowners would receive a larger share of them. In addition, landowners would benefit indirectly because of the fall in the real price of manufactures. Labor would benefit because their wages would rise and the price of part of the commodities they buy would fall. Merchants and master manufacturers, however, would suffer because increasing competition between increasing capitals would have a tendency to lower the rate of profit (interest?) and thereby check capital formation. This tendency would have to be averted if continued economic growth were to be achieved. Smith writes as if he actually believed that if only the obstacles to economic progress were removed, the innate tendency to truck and barter would be sufficiently powerful to engender ever increasing specialization, improvement in technology, and expansion of markets. These forces of economic progress would then counteract the tendency toward reduced capital formation and economic decline.

But it was extremely important that the obstacles to progress be removed. The notion that Smith was a doctrinaire advocate of laissez faire is erroneous.[8] He advocated at least four major programs of reform: the removal of impediments to free choice of occupation; to free trade in land; to internal free trade; and to free trade in foreign commerce. Moreover, he mentioned the need for government activity in such fields as public education and hygiene, public works, regulation of currency and coinage, progressive taxation, patents, copyrights, and even moderate export and import taxes for the purposes of revenue and development. Smith was convinced, nonetheless, that in general there was a strong presumption against government activity beyond its fundamental duty of security and justice. The government of his day was

[8] See the evidence cited in Jacob Viner, "Adam Smith and Laissez Faire," republished in *The Long View and the Short* (Glencoe, Ill., Free Press, 1958), pp. 213-245. His article, "The Case for the Poorer Countries," in *Stability and Progress in the World Economy*, D. C. Hague, ed. (London: Macmillan, 1958), is relevant to Section III of our paper.

corrupt and incompetent. On grounds of a priori reasoning and experience, he maintained that individual initiative applied in competitive ways to promote individual ends would best serve the general interest. He was fully aware of the fact that the economic interests of different occupational groups were bound to conflict with one another and with the interests of society as a whole. But he thought they could be restrained and partially reconciled by the operation of impersonal, competitive markets and, wherever necessary, by the operation of representative institutions under law. In principle, Smith's approach to government was functional: government activity is natural and good when it promotes the general welfare; it is unnatural and bad when it injures the general interests of society. He had strong prejudices in favor of laissez faire; but he also had strong prejudices against the powerful and the grasping. He was one of the first economists to deal sympathetically with the human welfare problem of the masses. Although he did not foresee the industrial revolution and the hardships incident to it, his *Theory of Moral Sentiments* and the *Wealth of Nations* were imbued with understanding tolerance in a world of great intolerance.

The economic progress of Britain up to the 1770's does not appear to have been inconsistent with Smith's eclectic explanation of it. Clearly the *Wealth of Nations* contained much that was revelant to the further economic development of Britain, as well as to that of other nations. By 1800 it had run nine English editions; it had appeared in the United States and Ireland; it had been translated into Danish, Dutch, French, German, Italian, Spanish, and Russian (1802). The reforms which Smith had recommended were slowly achieved in Britain, and as far as such things can be traced to their source, the *Wealth of Nations* appears to have been important in influencing public policy at home and abroad. We shall have occasion to observe that it still has relevance to some problems facing newly developing countries, but it must be borne in mind that Smith lived in an age when Britain was already undergoing economic progress. He was not analyzing nascent conditions prior to, or prerequisite for, economic development. As he pointed out:

> The money price of labour in Great Britain has, indeed, risen during the course of the present century. This, however, seems to be the effect not so much of any diminution in the value of silver in the European market, as of an increase in the demand for labour in Great Britain, arising from the great, and almost universal prosperity of the country. . . . The real recompense of labour, has increased considerably. . . .[4]

One must turn to David Ricardo for the first reasonably consistent classical theory of economic growth. In effect, a synthesis of classical

[4] Adam Smith, *The Wealth of Nations* (Cannan ed.; Random House, 1937), p. 200. Cf. also G. A. Elliott, "The Impersonal Market," *Canadian J. of Econ. and Polit. Sci.*, Nov., 1958, pp. 453–457.

dynamics characteristically purports to represent his views.[8] Basically, the argument rests on the Malthusian population principle and the law of historically diminishing returns. It runs as follows: In an early stage of the classical economy, the population is small compared to natural resources and consequently profits, the rate of accumulation, and wages are all relatively high. The high level of accumulation serves to increase production, but it also serves to keep up the demand for labor. Hence wages are high. This leads to a rising population. Since land is assumed to be fixed in quantity, there are diminishing average returns to additional units of labor in production. Therefore, as population increases, wages will tend to eat up more and more of the total product after rent payment and thereby reduce the amount left over for profits. The inducement to invest will decline and the demand for labor will be reduced. Wages will be forced toward "subsistence level" and profits again will tend to rise. As long as total product after rent is greater than the total wage bill, there will be profits. Capital accumulation will further be induced, driving up wages, increasing population, and so leading to a new round in the process of growth. Once the working population rises to the point where total wages equal total product minus rent, there will be no more profits even with wages at subsistence level. Accumulation will cease and the stationary state will have been reached. An increase in productivity brought about by inventions and discoveries, so the argument concludes, can only postpone the day of judgment.

This generally accepted model of "Ricardian economics" is not inconsistent with many passages to be found in Ricardo's writings. I think, however, that the most interesting aspects of Ricardo's discussion on growth are not to be found in the model per se, but in the way in which he uses his general analysis.

The really important problems facing Britain in the long run, according to Ricardo, were those of organization and efficiency: how to organize a growing economy with a rising population in which the key industries—manufacturing and agriculture—were developing at drastically different rates of productivity growth. The timeless question he poses is what rate of economic development is compatible with the resources, technology, and institutions of a country at a given time in its history. He endeavors to show that if the British economy will be organized efficiently—including essential reforms—its progress will be satisfactory; if not, it will suffer decline. The widely received view that Ricardo was a "pessimist" either is irrelevant or wrong. If anything, he

[8] See, e.g., William J. Baumol, *Economic Dynamics* (New York: Macmillan Co., 1951), Chap. 2.

was overoptimistic as to the long-run prospects for English labor, provided certain conditions were met.

To be sure, over and again, Ricardo reverts to his main theme:[8] Economic growth is contingent upon capital formation. This depends primarily upon the productive powers of labor. Such productive powers are generally greater when there is an abundance of fertile land. If an increase in capital occurs, it raises the demand for labor and wages and lowers profits. But the permanency of the rise in wages depends upon what happens to produce prices, and this depends upon the relation between the growth in numbers and the fertility of the land.

Since Britain was not an extensive country with an abundance of fertile land, more and more land of inferior quality would have to be taken up, and *ceteris paribus*, the real price of agrarian products would rise, whereas the real price of manufactures would fall. Rent per unit of labor and capital on comparatively fertile land would rise, and so would money wages. Profits consequently would fall. It was important to organize the British economy so that this would not happen, and the law of comparative advantage provided the principle whereby this objective might be achieved, for it showed how an economy could most efficiently allocate its resources among industries developing at differential rates of productivity growth. Following the tenets of comparative advantage, the adoption of free trade would lower agricultural prices, money wages, and rents; it would raise real wages and profits, and thereby bring about greater investments in the manufacturing industries. Improvements in agricultural production might also occur. A country such as England would thus be able to experience a gradual increase in capital larger than the gradual increase in population and enjoy a lasting growth in real income. Among other classical writers, John Stuart Mill went further and mentioned the possibility of a comparatively large rise in income changing the saving and size of family patterns of the population, and hence inducing a higher rate of progress. Ricardo and Mill both were at pains to emphasize, however, that the effects of capital accumulation would be different in different countries.

The classical writers espoused, in effect, more balanced international economic growth even though it meant more unbalanced domestic growth. They believed that at the margin the gain from international specialization would exceed the possible gain from more balanced domestic growth which might be brought about through tariff protection. Free trade in a setting of reasonable international equilibrium was thus

[8] See *Works and Correspondence of David Ricardo* (Piero Sraffa ed.; Cambridge Univ. Press, 1951), Vol. 1, *Principles.* Cf., also, George Stigler, "The Ricardian Theory of Value and Distribution," *J.P.E.*, June, 1952, *idem*, "Sraffa's Ricardo," *A.E.R.*, Sept., 1953; and Mark Blaug, *Ricardian Economics* (Yale Univ. Press, 1958), esp. Chaps. 2, 9, 10, and 12.

to bring about a more efficient use of domestic *and* international resources.[7]

The background material which was presented earlier suggests that Ricardo's vision of Britain's economic development was in the main correct, although the Malthusian population principle and the law of historically diminishing returns upon which his model allegedly rests were not. Certainly England's comparative advantage in manufacturing became overwhelmingly strong. Ricardo had rightly predicted that this would be brought about "by the improvements in machinery, by the better division and distribution of labour, and by the increasing skill, both in science and art, of the producers."[8] As regards the law of historically diminishing returns, we have seen that the real cost of producing wheat does not seem to have risen between Waterloo and the adoption of free trade. The price of wheat actually fell during this period, but not as much as other commodities. After the repeal of the corn laws, wheat imports greatly increased, but there was neither a ruinous drop in wheat prices nor in acreage under cultivation. The period between 1846 and the 1870's is known, in fact, as the golden age of British agriculture. Throughout these years real wages rose in industry as well as in agriculture.

Clearly, then, Ricardo's analysis and predicition of the ratio of the effectiveness of British resources during the nineteenth century were substantially correct. His prediction of the form in which diminishing returns in agriculture would manifest themselves was at least partially incorrect, as were his predictions on rents and profits. His analysis and prediction of the relationships between agricultural prices and real wages were manifestly wrong. Still, in his more general analysis when discussing various conditions, he wrote that "a small but fertile country, particularly if it freely permits the importation of food, may accumulate a large stock of capital, without any great diminution in the rate of profits, or any great increase in the rent of land."[9] He also mentioned that because of fixed capital in agriculture, output might remain the same—rather than decline—after tariff reductions; and agricultural prices might decline for some time after a war, owing to overexpansion.[10]

[7] For discussions on the implication of classical theory relative to different forms of economic growth and commercial policy, see Tibor Scitovsky, "Growth—Balanced or Unbalanced," in the forthcoming volume, *The Allocation of Economic Resources*, Essays in Honor of Bernard F. Haley, Abramovitz *et al.* (Stanford Univ. Press, 1959); Reinhard Bendix, *Work and Authority in Industry* (Wiley & Sons, 1956), Chaps. 1 and 2; Albert O. Hirschman, *The Strategy of Economic Development* (Yale Univ. Press, 1958), Chap. 1, *passim;* and Lionel Robbins, *Robert Torrens and the Evolution of Classical Economics* (St. Martin's Press, 1958), esp. Chap. VII.

[8] David Ricardo, *Principles of Political Economy and Taxation* (E. P. Dutton & Co., 1937), p. 52.

[9] *Ibid.*, p. 74.

[10] *Ibid.*, pp. 180-181.

Even in the hands of so great a man as David Ricardo, when propositions whose validity depended upon institutional conditions were assumed to be "self-evident truths," they soon seriously distorted reality. The analytical power and policy implications of Ricardian economics so chloroformed a substantial part of the profession that it failed to adjust its thinking to the conditions that were emerging in England in the latter half of the nineteenth century. We have seen that the economic development of England was becoming more and more dependent upon a rapidly changing world trading system, with the importance of foreign lending and the rapidity of adjustment to "wrong" investment becoming inextricably linked with the more limited problem of classical diminishing returns.

III

In the modern literature on growth, much stress is placed on economic integration. Authors rightly emphasize the advantages to be derived from technological and pecuniary internal and external economies of scale. They stress the complementarities to be derived from the relationships between the availabilities of required inputs, on the one hand, and the multiplier effects of increased demand for final products, on the other. But in actual governmental plans for economic development it is the economies net of diseconomies that matter. It is also frequently overlooked that integration results in greater advantages from freer trade among rival rather than complementary economies.[11] Nonetheless, once such broader considerations are taken into account, plans for integration may be a realistic version of the classical position as applied to modern conditions. It is consistent with a policy of concentrated and balanced growth of a community as a whole, and with unbalanced growth among its members. The larger the community, and the smaller the discrimination against the outside world, the more economic integration would approach classical conditions.

A paradox has developed, however, in another branch of contemporary theories of economic growth. Space permits only briefest mention of some interpretations of the well-known Harrod-Domar models. If these models are interpreted to state that the aggregate condition for the equilibrium rate of growth is that the percentage rate of growth of output times the marginal capital output ratio be equal to the *ex ante* aggregate saving, no objection can be made to them. That is, if (V) represents the stock of capital, (O) the rate of output, (t) time, and (a) the *ex ante* propensity to save, the condition is $\frac{\Delta O/\Delta t}{O} \cdot \frac{\Delta V}{\Delta O}$ be

[11] See Jacob Viner, *The Customs Union Issue* (Carnegie Endow. for Int. Peace, 1950), pp. 44 ff.

equal to (a); or $\frac{\Delta Y}{\Delta t}$ (i.e., aggregate investment) be equal to a. O (i.e., *ex ante* aggregate saving).[13]

The usefulness of these models—when combined with other forms of analysis—lies in their validity as a device for thinking about the questions they pose. They were so used in the first part of this paper to explain the process of international economic equilibrium in the nineteenth century and the emergence of disequilibrium in the twentieth. They are also a useful tool for analyzing how and why the present and future average rate of growth of income is likely to be different from that of the past; and for determining the potential rate of growth of real income of Western countries without the existence of substantial excess capacity. They may also explain why the assumed environment in the structure of the analysis may itself undergo change. These are indeed relevant attributes of contemporary theories of growth to developed countries. But when these theories are formulated in a way to predict causal relationships among the variables, maintaining that the rate of growth of income will, in fact, be equal to the proportion that investment is of national income over the capital-output ratio, then they appear to provide the kind of intellectual light that blinds rather than guides. The analysis presumes that by increasing investment as a proportion of national income underdeveloped countries would achieve a more balanced and higher rate of growth. Most of these countries of course require greater investment, but the post-Keynesian models are least applicable to their environments. There is no simple mechanical relationship in such countries between increased investment and increased real income. They suffer from all kinds of bottlenecks and are quickly plagued by rising prices. They require the inducement mechanisms, the catalysts of economic development: A satisfactory balance between ego-centered and community-centered incentives for effective leadership in organizing their economies for efficient and rapid advance; minimum standards of administration and education; development of investment and saving institutions. By applying contemporary growth models and drawing up plans for development solely in terms of the broad economic aggregates, many of these countries have encountered serious difficulties. They have nearly always turned out to be overambitious plans which they were unable to implement. This has impeded the development of relevant pricing mechanisms for their en-

[13] See William Fellner, "The Rate of Growth and Capital Coefficients," in *Long-Range Economic Projections*, Studies in Income and Wealth, Vol. 16 (Princeton Univ. Press, 1954); and Arthur Smithies, "Economic Fluctuations and Growth," *Econometrica*, Jan., 1957.

vironment—especially in the market for capital. The governments have therefore been compelled to use inefficient direct controls to an ever increasing extent; and this has led to greater and greater ineffective bureaucracy dealing with bigger and bigger monopolized industry.

Our criticisms notwithstanding, the classical and contemporary theories of growth have provided useful frames of reference for dealing with past and current problems of economic development. By isolating important relationships which required analysis, they contributed much to the relevance of economics as a sicence for the solution of social problems. In this respect, they have well passed the test of relevance. Paradoxically, they may have done so too well, for the contemporary theories in particular have provided excessively simple and popularly accepted solutions for extremely complex problems.

Economic growth, as the classical writers appreciated, is a unique historical process; it is usually erratic and unbalanced. Technically, the essence of the problem of growth is that all parameters become variables. Any theory of growth which places great reliance on a few simple relationships does not deserve serious consideration as an explanation of so vastly interdependent a phenomenon. The classical view that economic growth would be engendered "if only" restraints were removed and the contemporary view "if only" several prerequisites were met, are oversimplifications which are not applicable to newly developing countries.

We have observed that the long-term validity and usefulness of the classical theories was contingent upon the realism and/or obsolescence of their premises, on the one hand, and on the correctness or error of the analytical principles employed, on the other. Error with respect to premises appears to have been the primary difficulty. And so it probably will be with the contemporary theories.

In discussing development, the classical writers laid great stress on the importance of knowledge, good government, social capital, healthy agriculture, entrepreneurial ability, specialization, technological improvements, capital formation, comparative advantage, and free trade: in short, on the efficient organization of the economy through the "correct" allocation of resources by the operation of the pricing mechanism in competitive markets. It is in this way that they primarily used their theories of growth—as an application of economic principles demonstrating what may, or what may not, be done. Their policy considerations were consistent with their general liberal outlook and were in tune with the political, social, and business institutions of the time. Not having an adequate theory of growth, employment, or fluctuations, they did not realize that free trade would not necessarily engender much

economic development in backward economies that were associated with them.

The problems and conditions of present-day developing countries have little resemblance to the age of liberalism. By laying stress on investment requirements and capital output ratios, the contemporary theories of growth have relevance chiefly to the problem of sustaining a warranted rate of growth in developed Western economies. They provide a partial set of tools that can—and must—be expanded in generality if they are to be useful in practice. But in a world of impatience, when it is critically important for many underdeveloped countries rapidly to expand their productivity and to accumulate an enlarged stock of capital, it is understandable that these models should have strong appeal. If judiciously applied, they may have relevance even here. But it would be irresponsible for Western economists not to point out the limitations of these models for such conditions. It also would be regrettable if some of the aforementioned factors that were stressed by the classical, and some contemporary, economists were overlooked. For the classical and contemporary theories both maintain that capital accumulation is a primary requisite for economic development. They are both consistent with the view that of all resources only human scarcity is desirable. In correspondence, even Ricardo mentioned the importance of checking numbers through birth control; John Stuart Mill was, of course, much more forthright at a precocious age. In neither the classical nor the contemporary theories has economic growth ever been considered as an end in itself, or as a means of expanding aggregate output for reasons of national power. Indeed, the classical writers used the terms progress and economic growth interchangeably. Growth in per capita levels of well-being was considered to be virtually indispensable to growth in human dignity. When discussing economic growth, classical writers—even more than contemporary ones—have stressed the importance of liberty as well as independence. It would be a travesty of history if the contemporary models of growth had the effect of blurring the importance of these fundamental issues, for it is not the models themselves but the way in which they are used that is of crucial importance.

Neither the classical nor the contemporary models have much relevance to the international trade problems of newly developing countries. We have noted that the twentieth century has been plagued with much international economic disequilibrium. Underdeveloped countries, particularly the smaller ones, must rely to a substantial degree upon unbalanced economic growth. Their development is, therefore, at least in part dependent upon the effective operation and growth of the devel-

oped Western economies, as well as upon the continuation of their foreign aid programs. Our analysis of growth must take such considerations into account. If the newly developing countries are to achieve their objectives of economic development in a system of genuine political and economic interdependence with the Western world, improved institutional arrangements will have to be worked out that not only provide them with greater immunity from international crises but help them apply Western experience to their own institutions in a more efficiently organized manner and in greater scope than heretofore. The task is great and terribly complex; but it is not greater than the need.

DISCUSSION

ROBERT E. BALDWIN: Recent investigators into the origins and development of the labor theory of value find themselves arriving at rather unique conclusions. Usually contemporary historians of economic doctrine are provided with abundant opportunities to disagree with one another over the interpretation of what any one economist or group of economists really was saying about a given subject. In the case of the labor theory of value, however, recent commentators are surprisingly unanimous. They agree that neither Smith nor Ricardo nor even Marx held a labor theory of value. Indeed, so obvious does this conclusion seem to be that the interesting question becomes not whether these writers did maintain a labor value theory but how anyone could ever have thought they did.

The first step in seeking the answer to this question quite naturally is to inquire whether the contemporaries of, for example, Ricardo interpreted his analysis as one that was based on a labor theory of value. Professor Stigler in his recent article and now Professor Gordon in his excellent paper both convincingly argue that most post-Ricardian economists did not believe Ricardo claimed that commodities exchange at ratios which are dependent upon the quantities of labor involved in their production. But if this is the case, how did it happen that Ricardo's name became associated with this theory of value?

Professor Stigler concludes that it was due to the failure of later economists to distinguish between an empirical proposition and an analytical one. Ricardo, he readily grants, held what may be called an empirical labor theory of value; namely, a theory that states that the relative quantities of labor required in production are the dominant determinants of relative values. However, Professor Stigler argues, Ricardo did not hold an analytical labor theory of value; namely, a theory asserting that the quantities of labor are the only determinants of relative prices. Professor Gordon, rightly I think, is not entirely satisfied with this explanation. In addition to Professor Stigler's point, he suggests that later commentators confused Ricardo's analysis of absolute value in which he emphasized the significance of labor and his analysis of relative value in which he more frequently noted the importance of the time element in the determination of relative prices.

One wonders, however, with regard to this whole matter whether we are not now overemphasizing the extent of the misinterpretation of Ricardo and Marx. It is quite true that one can turn to texts on economic thought and find some bald statements asserting Ricardo held a labor theory of value. But writers of texts are forced to be extremely brief and perhaps understandably are overanxious to distinguish various schools of thought. A sympathetic reading of most of these texts does not, I think, lead to the conclusion that the authors disagree with Professors Stigler's and Gordon's interpretation of Ricardo's analysis of value. Similarly, some of the statements by the marginal utility theorists concerning Ricardo's theory of value do not

indicate substantive disagreement over what he was saying. As we know only too well from the experience with Keynes's *General Theory*, authors who are putting forth new theories intentionally oversimplify the analyses of their predecessors. This does not mean that they totally misunderstood earlier contributions or that their statements were long taken at face value by the majority of economists. In short, let us interpret later writers with the same generosity that, rightly I think, enables Professor Gordon to conclude that despite what they say there was no real difference between Mill and McCulloch on the one hand and Ricardo on the other. If we do this, then I wonder if we also cannot say that there is no basic difference between Professors Stigler's and Gordon's interpretation of Ricardo and what the majority of other commentators on Ricardo have said.

What seems to have happened over time with respect to the appraisal of Ricardo's value theory is not so much a confusion between analytical and empirical propositions as a change in later writers' views concerning what is an acceptable empirical proposition. Ricardo was mainly interested in studying how shifts in the relative distributive shares affected economic development. For this purpose the labor theory of value seems to be an acceptable empirical proposition. Later writers, however, were more interested in short-run variations in relative prices and found this theory empirically inadequate. The Ricardian theory of value, consequently, has been criticized. But if we treat these criticisms sympathetically and judge them in the light of the questions later writers were interested in, it does not seem to be necessary to conclude either that Ricardo was generally misinterpreted or that many economists have been confused by their failure to distinguish analytical and empirical propositions.

Professor Letiche in an incisive analysis of Britain's remarkable growth during the first half of the nineteenth century emphasizes the unique set of favorable circumstances that enabled this development to be so successful. Britain was able to raise her level of income rapidly because her structure of export production was complementary to the needs and resources of newly developing countries in Europe and overseas. Moreover, her growing import requirements produced powerful expansionary effects both in Europe and the areas of recent settlement.

This nineteenth-century experience leads Professor Letiche to emphasize that the key to successful development in the poor countries is unbalanced rather than balanced growth. If by balanced growth is meant an indiscriminate increase in all lines of economic activity without regard to current market possibilities and factor supplies, there can be no dispute with this proposition. However, as Letiche points out, in considering present development prospects one cannot rely upon the establishment of the same kind of complementary relationship between rich and poor countries as that which prevailed in the nineteenth century. The existing resource bases in rich and poor nations as well as the outlook for international movements of capital and labor do not seem to be conducive to an imminent, large-scale increase in trade between the two groups of countries. Instead, the path to higher income levels in the underdeveloped

nations requires greater reliance on the expansion of production that is mainly consumed domestically or within this group of nations.

The lesson of nineteenth-century international development, nevertheless, is still applicable. The poor countries should concentrate upon the expansion of internally complementary sectors rather than attempting immediately to reproduce the industrial structure of the rich nations. The selection of these sectors also must be based upon a realistic appraisal of current resource supplies and market opportunities. However, the extent to which such a policy of unbalanced growth can be pursued will in general be less than it would be if the main impetus to development were an increase in export production. As growth in selective lines of production generates new domestic market opportunities and improves their factor base, the poor countries must turn to new activities that are economically profitable because of these new conditions and also that in turn will improve market and resources conditions. It is in this sense that their development must be balanced. In short, if the poor countries could rely upon a rapidly growing export market, a vigorous expansion of the export sector would, as in the British case, be sufficient to pull the entire economy up to higher income levels. Since the outlook for this development approach is not highly favorable in most poor countries, they must instead move forward by small steps—first in one set of industries and then in another. Each step forward, of course, must be based upon the improved market opportunities and factor conditions that the previous steps have created.

William J. Fellner: In connection with Mr. Gordon's interesting paper, I shall first formulate three propositions, all of which I consider essentially his. I believe that these propositions throw a good deal of light on the nature of "classical labor value theory." At one point I will suggest a qualification, and at the end I will express dissent from one of Mr. Gordon's conclusions.

Mr. Gordon's first proposition is that neither Adam Smith nor Ricardo had a labor-content theory of relative value (relative price). With respect to Ricardo I would qualify the statement by adding that he frequently did use a labor-content theory of relative value as a first approximation (or perhaps merely as a device for simplification), and that his labor-content theory of absolute value presumably was also intended as such an approximation. Smith on the other hand advanced a labor-content theory of relative value only for the "early and rude state of society," but not even as a simplifying device did he use such a theory for any eighteenth-century community with which he was concerned. He had a labor-command or labor-equivalent theory of relative value and also of absolute value.

Mr. Gordon's second proposition is that those parts of Smith's and of Ricardo's analysis which applied to value in an absolute sense must be interpreted not as presenting a testable scientific theory but as suggesting views concerning an intuitively acceptable unit of measurement. I think I am stating Mr. Gordon's argument in essence when I say that both Smith and Ricardo felt that the pain cost (sacrifice cost) of obtaining output consists exclusively or predominantly of the effort of workers, and that therefore it is justifiable

to disregard other pain costs. Smith, as is well known, concluded that the real value of output at any time and place depends on the amount of workers' effort (number of hours of work) which the output could purchase. In other words, the labor equivalent of goods measures their absolute real value. Ricardo, on the other hand, considered not the labor equivalent but the labor content of goods the significant factor. He concluded that the same number of hours of work would always produce the same absolute real value, although a rise in the productivity of labor would cause a given number of labor hours to produce more riches. Smith asserted interregional and intertemporal invariability of the pain cost of labor effort, and Ricardo, too, implied this invariability. Hours of work were regarded as units suitable for making intertemporal and international comparisons.

Third, Mr. Gordon is quite right in maintaining that this underlying "classical" ethical judgment is not in the least similar to that of Marx. It is true that an author who, when he is concerned with pain costs, places all the emphasis on labor, will be inclined to gauge the performance of an economy largely by how well the economy does by its workers. But such an author may very well feel convinced that an economy based on private property and on free enterprise—thus based on profit incentives—does better by its workers than an economy with extensive government regulation. Indeed, both Smith and Ricardo were convinced of this.

After having expressed agreement with much of Mr. Gordon's illuminating analysis, I will turn to a point in regard to which I dissent from his position. Gordon suggests that Smith (somewhat in contrast to Ricardo) was reasonably successful in expressing in his value theory the judgment that labor is the essential pain cost and, therefore, an economy is the better off the higher the real wages are which its workers earn. Gordon reminds us of the fact that even at present we are in the habit of engaging in welfare comparisons by comparing the number of hours which it took a worker to earn the equivalent of a pair of shoes fifty years ago with the corresponding number of labor hours as of now; or by comparing the number of hours it takes a worker to earn the equivalent of specific goods in the United States with the corresponding number of hours needed in Russia. Such comparisons imply that the pain cost of work is viewed, in accordance with Smith's suggestion, as in some sense "invariable" interregionally and intertemporarily; and comparisons of this sort imply also that the quantity of labor which can be exchanged for a given quantity of goods plays a significant role in intuitively acceptable welfare judgments.

So far, so good. But it is far-fetched to claim that by conceding merely this we have gone some way toward accepting Smith's measure of value. The judgment that it is advantageous if workers earn the equivalent of a given quantity of goods in little time implies nothing whatever concerning a standard for comparing the value of different quantities of goods. It is an essential part of Smith's conception that we should be willing to call the value of the smaller American output per man-hour of fifty years ago approximately the same as that of the larger present American output per man-hour;

and that we should be willing to call the value of the smaller Russian output per man-hour approximately the same value as that of the larger American output per man-hour. If the labor equivalent of output were the measure of value (as with Smith), all these outputs would have precisely the same value only in the event of a constant income distribution; yet correction for changing income distribution would surely not make enough difference to lend Smith's conclusion plausibility. If value were made to depend on labor content (as with Ricardo), all the outputs which we have listed would have to be assigned precisely the same value. Now, I would like to submit that suggesting the primacy of labor as a pain cost, and thus suggesting the primary importance of trends in labor income for the appraisal of welfare trends, is one thing; suggesting that the per capita output of a very poor country has about the same value as the per capita output of a very rich country is quite another thing. Gordon is right in maintaining that Smith and perhaps also Ricardo meant to suggest the first of these two things but actually they made the second of the two suggestions. The first became built into the second, and the second must surely seem a very peculiar judgment to anyone's common sense.

As Mr. Gordon says, quite convincingly, the classical labor theories of absolute value did not contain a testable "scientific hypothesis." These theories merely meant to suggest an intuitively acceptable judgment on the nature or "essence" of economic value. But I think it is reasonable to conclude that these theories failed in the only sense in which theories of this sort can fail; namely, in that practically no one's unspoiled common sense is willing to consider the result intuitively appealing. Regardless of what one thinks of the concept of pain cost and of the importance of labor's real income, no one's unspoiled common sense considers the value of output per man-hour in a poor country about the same as the value of output per man-hour in a rich country; and it is difficult to imagine that the particular judgment which we now reject would have been intuitively appealing to unspoiled common sense at any time. Nor could this difficulty be eliminated by introducing abstinence along with labor into the concept of pain cost and by making such a composite unit the standard of value for intertemporal or international comparisons.

The classical labor value theories were abandoned because it became clear that all intuitively acceptable statements on value must recognize the dependence of value on the ability of a product to satisfy human wants. The intuitively satisfactory statement about an advanced country is that in it the output per man-hour has a much greater real value than in a poor country. International and intertemporal comparisons are notoriously very crude, but the crude measure generally used in such comparisons is some sort of price-corrected currency unit. The implications of this are quite different from those of using labor as the measure of absolute value.

One may very well believe in the primary significance of real wage rates for economic welfare comparisons and yet regard the classical labor value theories as wholly unconvincing. Similarly, those who believe in the abolition of private property may nevertheless consider the Marxian labor value theory as wholly unconvincing, although the role which "Marx the prophet" plays

on the other side of the Iron Curtain makes it very difficult to admit this in the Communist countries.

Much of what I have said merely paraphrases Mr. Gordon's excellent paper. But I do not share Gordon's view that Smith's labor value theory is accepted by contemporary common sense. I would be inclined to say that the classical labor value theories have failed by their own standards. Neither of the two early giants of our profession, Smith and Ricardo, were at their best on value. And it is Ricardo rather than Smith who deserves credit for having gradually developed very grave misgivings about the worth of his own value theory.

SELECTED PROBLEMS IN ECONOMIC THEORY

GROWTH, FLUCTUATIONS, AND STABILITY*

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I. *Introduction and Summary*

This paper is an attempt to summarize some results of a larger undertaking whose purpose may be stated briefly as follows: to explore the implications of three recent developments in aggregative economic analysis for an improved understanding of the forces generating growth, fluctuations, and stability in an advanced private capitalistic economy. The first of these developments is the theory of consumption function as a description of the behavior of consumers in their effort to adjust the level of their asset holdings over time. The second is the modification of the acceleration principle suggested by Chenery [4],† Goodwin [8], Modigliani [14], and others, which permits us to look at the investment function as a description of the behavior of producers in their endeavor to adjust their productive facilities—fixed and circulating capital—over time. The third is the reintroduction of the price mechanism in the analysis of economic growth, which is best illustrated by the recent work of Solow [17].

As Duesenberry points out in the introduction to his latest book [5], in the classical models, the major equilibrating device was the price mechanism, and this mechanism was considered sufficiently effective to prevent significant and systematic departures from a situation in which all relevant markets are cleared. By contrast, in most of the business cycles and growth models which stem, directly or indirectly, from the Keynesian analysis, the price mechanism is conspicuously absent; in Harrod's system, for instance, there is hardly any mention of prices [9]. The notion that this equilibrating mechanism is so ineffective that it can be disregarded altogether—a view which incidentally is Keynesian rather than Keynes's—plays a critical role in the explanation of the instability of the system and its tendency to cyclical behavior. To give an important illustration, in the models under discussion, investment is largely governed by some variant of the acceleration principle, and

* The authors of this paper are greatly indebted to their colleagues, particularly to Professors Robert M. Solow and Edwin Kuh, of Massachusetts Institute of Technology, for a number of valuable comments and suggestions on earlier drafts of this paper.

† See references at the end of this paper.

therefore, in the final analysis, by the capital output ratio or capital coefficient. Now, this capital coefficient is typically regarded as a purely technological datum. Its value is in no way related or responsive, either in the short or in the long run, to the supply and demand for capital funds through the price mechanism—the "price" of capital—or, for that matter, through any other device. We feel, in common with many other economists, that this proposition is basically untenable. Indeed, if this hypothesis were correct, the behavior of the economy, and, in particular, of the rate of employment, would be much too sensitive to the state of technology and the vagaries of technological change. Except in the hair-line case in which the state of the arts happened to generate precisely the right capital coefficient, the system, just like Harrod's system, would tend to exhibit—even on the average and in the long run—a perennial underutilization of the labor supply—either through a chronic deficiency of effective demand or through a chronic shortage of capital. Hicks's attempt at getting out of this impasse through the *deus ex machina* of autonomous investments, which happen conveniently to grow just at the appropriate rate, is quite unconvincing in spite of its brilliancy [10], [11]. The very fact that the historical record suggests a fair degree of constancy in the observed ratio of capital to output over a period marked by dramatic technological innovations is sufficient to cast serious doubts on the notion that the capital coefficient can merely reflect the state of the arts.

We propose, therefore, to start from the hypothesis that the price mechanism, for all its shortcomings, is capable of affecting economic behavior—both in terms of household willingness to hold and accumulate wealth and in terms of producers' choices among existing production techniques and search for new techniques. We shall therefore argue that neither the chosen production technique nor the saving habits can be treated as given parameters of the system, determined respectively and independently, by the existing technology and by a more or less inscrutable psychological law. At least in the long run these parameters must be regarded as endogenous variables, whose values are mutually adjusted through the operation of the price mechanism.

We examine first the behavior of a system in which the price mechanism is capable of keeping all market continuously and instantaneously cleared. The resulting model is very similar to that studied by Solow [17] and hence we may utilize his results with respect to the conditions of stability of the equilibrium growth path. The only important difference between Solow's model and ours here consists in replacing his simple saving function with the Modigliani-Brumberg model which, we feel, provides a more solid foundation for the explanation of saving behavior and also permits us to clarify the interrelationships between the

stock and the flow variables in the equilibrium process. We are especially concerned with the behavior of the system when the labor force grows at an exogenously given constant rate. In this case, if a stable growth path exists, employment, being equal to labor force, must also grow at this rate. We further show that, if the production possibilities can be approximated by the Cobb-Douglas production function with the constant return to scale and if there is no technological change, labor income, property income, household net worth, and the stock of capital in use would themselves grow at the same rate. This conclusion can be generalized to the case in which a constant rate of increase of full employment output is brought about by mixture of population growth and the technological change of the neutral saving type.

We next proceed to examine the implications of recognizing that the process of adjustment must necessarily take time, at least under prevailing forms of economic organization. We argue that, under these conditions in the short run the parameters of both the consumption and the investment function, including the capital coefficient, can be largely regarded as historically given. We show that, as a result, the system will be basically incapable of growing steadily so as to maintain full employment of resources. The full employment growth path of income which would be traced by a hypothetical system with instantaneous adjustment performs in our model a function similar to the capacity ceiling in Hicks's model. Actual income and employment, on the other hand, will necessarily be unstable and will tend to trace a succession of cycles (at least in terms of the rate of utilization of resources). These cycles, however, may differ considerably from each other in terms of duration, amplitude, and other relevant characteristics.

In order to keep the exposition simple, we assume that there is only one composite commodity, a single type of labor, and a single type of capital, consisting of an accumulated stock of the commodity produced. The time subscript, t, refers both to a point in time or a finite interval of time, but it will be clear from the context in which sense the symbol t is used.

II. *Aggregative Implications of the Modigliani-Brumberg Consumption Function*

The theory of household consumption behavior proposed by Modigliani and Brumberg [15] implies that the aggregative consumption function must be of the form

$$C_t = \alpha_1' Y_t + \alpha_2' Y_t^e + \alpha_3' A_{t-1} \tag{II.1a}$$

where C_t, Y_t, Y_t^e, and A_{t-1} denote the average rates of consumption, nonproperty income, and expected nonproperty income during the pe-

riod t, and the initial stock of consumers' net worth for the period t, respectively, and α's are constants. The derivation of this function is a topic in its own right, and we have no time or space to go into it in this paper.

It will suffice to note that value of the parameters depends in principle on the age structure of population (and hence on population growth) and on the rate of return on assets; but are in fact not likely to be significantly affected by variations in these factors within the empirically reasonable range.

For expected nonproperty income, we hypothesize that those who are currently employed on the average will expect their income to remain substantially the same except for a trend factor, while those who are unemployed expect to earn in the future a fraction of the average wages of those currently employed. This hypothesis enables us to rewrite equation (II.1a) as

$$C_t = \alpha_1 Y_t + \alpha_2 \frac{L_t}{E_t} Y_t + \alpha_3 A_{t-1} \tag{II.1}$$

$$\alpha_1 + \alpha_2 \simeq \alpha_1' + \alpha_2', \qquad \alpha_3 = \alpha_3'$$

where L_t and E_t are labor force and employment in period t, respectively. The Modigliani and Brumberg theory predicts that the values of the parameters $\alpha_1+\alpha_2$ and α_3 should be in the ranges of .55 to .7 and .07 to .11, respectively, and that equation (II.1) should be homogeneous, but does not say anything about the distribution of the value of $\alpha_1+\alpha_2$ between these two parameters. A fairly exhaustive statistical test definitely indicates that these predictions are well confirmed, and that these values of the parameters are very stable over the years between 1929 and 1955. The results of these statistical studies are reported in another paper. For the purpose of numerical illustrations given below, we shall slightly modify values of these parameters and assume that

$$\alpha_1 + \alpha_2 = .685, \qquad \alpha_3 = .08 \tag{II.1b}$$

The modifications are necessary because of simplifications of concepts of the variables involved for the purposes of present analysis.

Before we proceed further, it will be helpful to note a few important characteristics of the consumption function (II.1). Let us visualize a situation in which nonproperty income, Y, grows at a constant rate n which is precisely consistent with the maintenance of full employment, and the rate of return on assets, r, is constant and expected to remain constant.[1] Under these conditions, the ratio of aggregate household net

[1] Such a situation is, of course, not possible in reality unless the quantity of assets is already at equilibrium in its relation to income and the rate of return, as it will become clear in the next section. However, we find a brief attention to this highly abstract situation quite instructive.

worth, at the beginning of the period, A_{t-1}, to nonproperty income, Y_t, will asymptotically approach a value a, given by

$$\frac{(1-\alpha_1-\alpha_2)}{n+\alpha_3-r} = a(r,n). \tag{II.2}$$

To establish the above propositions, let us first note that under our assumption, total property income in year t can be written as rA_{t-1}, while the assumption of full employment implies $L_t/E_t = 1$. Hence, from the definition of saving, we can write

$$\begin{aligned} S_t &= Y_t + rA_{t-1} - C_t = Y_t + rA_{t-1} - (\alpha_1+\alpha_2)Y_t - \alpha_3 A_{t-1} \\ &= (1-\alpha_1-\alpha_2)Y_t - (\alpha_3 - r)A_{t-1} \end{aligned} \tag{II.3}$$

Dividing both sides of equation (II.3) by A_{t-1}, adding and subtracting the quantity

$$\frac{(1-\alpha_1-\alpha_2)}{a(r,\,n)},$$

and remembering equation (II.2) we obtain

$$\begin{aligned} \frac{S_t}{A_{t-1}} &= \left(\frac{Y_t}{A_{t-1}} - \frac{1}{a}\right)(1-\alpha_1-\alpha_2) + \frac{1-\alpha_1-\alpha_2}{a} - (\alpha_3 - r) \\ &= n + (aY_t - A_{t-1})\left[\frac{1-\alpha_1-\alpha_2}{aA_{t-1}}\right] \end{aligned} \tag{II.4}$$

Since the coefficient of $(aY_t - A_{t-1})$ is positive, it follows that

$$\frac{S_t}{A_{t-1}} \gtreqless n \qquad \text{as } \frac{A_{t-1}}{Y_t} \lesseqgtr a \tag{II.5}$$

Now we also have the definitional relationship

$$S_t = A_t - A_{t-1} \tag{II.6}$$

Hence, S_t/A_t is simply the rate of increase of net worth. (II.4) then says that if the asset income ratio is below the "equilibrium" value, $a(r,\,n)$, then the rate of increase of A is larger than n. Thus assets rise faster than income, causing asset income ratio to rise toward a. If the asset income ratio is greater than a, the converse will be true. Note also that, when the ratio of assets to income is in fact a, we have

$$\frac{S_t}{Y_t} = \frac{S_t}{A_{t-1}}\,\frac{A_{t-1}}{Y_t} = na(r,\,n) \tag{II.7}$$

We must stress at this point that the meaning of equation (II.2) is to define the relation between assets and income which consumers as a

whole would wish to maintain for a given rate of growth and a given rate of return. Equation (II.1) and the analysis following equation (II.2) tells us that, when the rates of growth and of return on assets change, assets would not be adjusted instantaneously to satisfy equation (II.2), but only gradually and asymptotically. We may also note that the ratio of the terminal assets to nonproperty income that must prevail, when the ratio of the initial assets to nonproperty income has reached the value a, is given by

$$\frac{A_t}{Y_t} = \frac{A_t}{A_{t-1}} \frac{A_{t-1}}{Y_t} = (1 + n)a(n, r) \tag{II.8}$$

III. *The Behavior of the System under the Assumptions of Steady Growth of Labor Force and Perfect Market with Instantaneous Adjustment*

In Harrod's model of growth, behavior of both consumers and producers are completely insensitive to prices and the rate of interest, so that the question of how fast producers and consumers adjusted to the changes in prices and the rate of interest never arose. Solow went to the other extreme on the production side and assumed that producers always equate the marginal productivity of their capital to the rate of interest, while retaining the assumption that the behavior of consumers is completely insensitive to the rate of interest. We wish now to generalize the model of Solow by substituting for his simple consumption function consumer behavior developed in the previous section. In this section, we shall investigate the behavior over time of an economy in which all markets are perfect and not only adjustments by producers but also the adjustments by consumers are instantaneous. Analysis of such a hypothetical economy is of considerable interest for two reasons. In the first place, it will provide us with a very useful framework in which to study the role played by market imperfections and sluggish adjustments. In the second place, we shall also show in the next section that the characteristics of the time path followed by an economy with "sluggish" adjustments are closely related to the path traced by a hypothetical economy with the same technological knowledge and the same consumer preferences but exhibiting perfect, instantaneous adjustments.

Since it is assumed, as stated in the introductory section, that there is only one kind of capital consisting of an accumulated stock of a single composite commodity, the aggregate net worth of consumers is the same thing as the aggregate stock of capital in existence. Under our assumption, there are only three markets to be considered: the market for the commodity or aggregate output; the labor market; the capital market.

Following Harrod and Solow, we shall assume that the supply of

labor, L, is independent of wages and equal to the labor force, which is itself exogenous and grows at the constant rate n.[2] Thus the supply of labor is given by

$$L_t = L_0 e^{n't} \tag{III.1}$$

The production possibilities will be described by a production function. In this paper we shall limit ourselves to analyzing the case in which the production function can be approximated by a Cobb-Douglas function with the constant return to scale. For the moment, we shall also assume that there is no technological change. Thus, our production function can be written as

$$Y_t^* = f(K_t, E_t) = XK_t^{\beta}E_t^{1-\beta} \tag{III.2}$$

where Y_t^* is the rate of output gross of depreciation, K_t is the stock of capital in use, E_t is employment of labor, and X is the scale factor, assumed to be constant over time.

Under the assumption of perfect markets the real wage rate w (units of product per man per time) will be equal to the marginal productivity of labor, or

$$\frac{\partial f}{\partial E_t} = w_t$$

which can also be regarded as expressing the demand for labor as a function of the wage rate. Remembering that, by definition,

$$Y_t = w_t E_t,$$

we may rewrite the above equation as

$$\frac{\partial f}{\partial E_t} = \frac{Y_t}{E_t} \tag{III.3}$$

The description of the labor market is completed by the clearing of market condition

$$E_t = L_t \tag{III.4}$$

Proceeding now to the capital market, we can first write a demand equation for the stock of capital, analogous to (III.3); namely,

$$\frac{\partial f}{\partial K_t} = r_t' + \delta' \tag{III.5}$$

[2] When the adjustment of the system is instantaneous, and therefore time is treated as a continuous variable, the rates of growth, of depreciation, and of return on assets will have slightly different values than in a model using discrete time periods. These values will be primed. The relation between the two values can readily be established by means of well-known formula such as the following:

$$e^{n't} = (1 + n)^t$$

Here the left-hand side is the gross marginal product of capital and the right-hand side is the gross cost of capital, the sum of the rate of return on assets, r_t, and the rate of depreciation, δ. The latter is taken here as a datum, in the interest of simplicity. Our next problem is to formulate the aggregate supply of capital, for which purpose we can rely on the results of Section II. However, the formulation in Section II was in terms of discrete time periods, and we must now modify it to conform to the continuous formulation of this section. In particular, when the length of the period approaches zero, equation (II.8) approaches

$$\text{(III.6)} \qquad A_t = a(r_t', n') = \frac{(1 - \alpha_1 - \alpha_3)}{n' + \alpha_3 - r_t'} Y_t$$

which can be interpreted as the supply function of capital. The symbols n' and r' represent the continuous equivalents of the rate of growth and the rate of return on assets. In addition, we have the equilibrium condition for the capital market

$$\text{(III.7)} \qquad A_t = K_t$$

Finally, in the commodity market, we already have the supply function; namely, the production function given by equation (III.2). The demand for commodity is the sum of two parts. The first is the gross investment demand,

$$\text{(III.8)} \qquad I_t = \frac{dK_t}{dt} + \delta' K_t$$

while the second part is the consumption demand,

$$\text{(III.9)} \qquad C_t = (Y_t^* - \delta' A_t) - \frac{dA_t}{dt}$$

The equilibrium condition is given by

$$\text{(III.10)} \qquad Y_t^* = C_t + I_t$$

Our system contains nine unknowns, L_t, E_t, K_t, A_t, Y_t, Y_t^*, I_t, C_t, and r_t, and ten equations, (III.1) to (III.10). But, as usual, one of the clearing market equations is redundant. To see this, we differentiate the both sides of equation (III.7) with respect to time to obtain

$$\text{(III.7')} \qquad \frac{dA_t}{dt} = \frac{dK_t}{dt}$$

The substitution of equations (III.8) and (III.9) into (III.7′) gives equation (III.10), showing its redundancy.

Since we are at the moment interested in the stock aspects of our

model, we can disregard (III.8) and (III.9) and the two flow variables C_t and I_t which appear in these two equations and nowhere else. The remaining seven equations and seven unknowns form a determinate system which can be shown to possess a solution.[3] Because of the homogeneity present in the system, we can write the solution as

$$\text{(III.11)} \qquad r_t' = \bar{r}; \qquad Y_t = \bar{y}L_o e^{n't}; \qquad Y_t^* = \bar{y}^* L_o e^{n't}; \qquad A_t = K_t = \bar{k}L_o e^{n't}; \qquad E_t = L_o e^{n't}$$

where $\bar{r}$, $\bar{y}$, $\bar{y}^*$, $\bar{k}$, are constants depending on the parameters of the production function and the consumption function and the rate of growth of population, n'. This solution corresponds to the equilibrium point in Solow's model, where the rate of interest and the real wage are no longer changing, while the flow and stock variables all grow at the same rate as the rate of growth of population n'.

Note that, on the equilibrium path of growth,

$$\bar{k}L_o e^{n't} = K_t = A_t = Y_t a(\bar{r}', n') = \bar{y}L_o e^{n't} a(\bar{r}', n')$$

and hence,

$$\bar{k} = \bar{y}a(\bar{r}, n')$$

Also,

$$Y_t^* = Y_t + (\bar{r} + \delta')A_t = [1 + (\bar{r} + \delta')a(\bar{r}, n')]\bar{y}L_o e^{n't}$$

thus,

$$\bar{y}^* = [1 + (\bar{r} - \delta')a(\bar{r}, n')]\bar{y}$$

It further follows that, along the equilibrium path of growth defined by (III.11), the capital output ratio will remain constant, and can be written in the form

$$\text{(III.12)} \qquad K_t = hY_t^*$$

Solving the above equation for h and making appropriate substitutions will enable us to write

$$\text{(III.13)} \qquad h = \frac{\bar{k}}{\bar{y}^*} = \frac{a(\bar{r}, n')}{1 + (\bar{r} + \delta')a(\bar{r}, n')}$$

Note that the usual acceleration model of investment can be obtained by merely differentiating equation (III.12) with respect to time, and substituting (III.8),

$$\text{(III.12b)} \qquad I_t - \delta' K_t = h\frac{dY^*}{dt}$$

[3] The existence of a solution can be proved by exhibiting a numerical solution for the system. Preliminary investigation suggests that multiple solution is unlikely though they cannot be excluded a priori.

Equation (III.13) defines the relationship between the equilibrium values of the capital output ratio, or capital coefficient, and the rate of return on assets for a given rate of growth of labor force. It will be seen that these equilibrium values are simultaneously determined and depend in the last analysis on the parameters of both the consumption and production functions.

Let us now assume that the rate of growth, n, has the numerical value of .04. For the moment, we must interpret the total growth to be due to the increase of population, but the cause of the growth will be later split between the increase of population and a very special type of technological improvement, justifying the relatively high rate of growth of 4 per cent per year.

Next, let us suppose that the parameters of the consumption function had the numerical values which were found from an empirical study of the American economy and reported in equation (II.1*b*). Finally, we observe that, according to Goldsmith's empirical estimates, [7], the average ratio of property income to assets is around 5 per cent and the average rate of depreciation, δ, around 4 per cent, after making proper adjustments for the simple structure of our model relative to the complex economy to which the data relate. If this rate of return is taken as the equilibrium value, and the above values for the rate of growth and the parameters of the consumption function are accepted, then, by substituting them into equation (II.2), the equilibrium value of assets nonproperty income ratio, $a(r, n)$ is found to be 4.5. This result is roughly consistent with Goldsmith's empirical findings when certain conceptual adjustments are made, such as elimination of nonreproducible physical assets and government debt from his net worth figures.

Next, substitution of the above values of r, δ, and $a(r, n)$ into equation (III.13) yields the value of capital coefficient of approximately 3.2.

With the help of the above results we can also go one step further and secure an estimate of the parameters of the production function (III.1). We know that the shares of nonproperty and property income must be given respectively by the exponents of E and K in the production function (III.1). Thus,

$$1 - \beta = \frac{Y}{Y^*} = \frac{\bar{y}}{\bar{y}^*} = \frac{1}{1 + (\bar{r}' + \delta')a(\bar{r}', n')} = .712; \quad \beta = .288$$

We must hasten to add that the above estimation procedure in no way implies that the parameters of the production function depend on those of the consumption function. As already stressed, the rate of return on assets and capital coefficient reflect simultaneously the parameters of both the production and consumption functions. It is only that, in our view, given the current availability of data, it is easier to secure

relatively good estimates of the parameters of the consumption function and the return on assets and infer from them the parameters of the production function.

Finally, we must specify the scale factor, X, in the production function to complete our model in this section. Because of the homogeneity of the production function and the consumption function, we can choose units of measurement of labor and output arbitrarily. We shall find it convenient to adopt units of measurement such that one unit of labor, when combined with the optimal quantity of capital, will produce one unit of output. Thus, we have

$$1 = X(h)^{\beta}(1)^{1-\beta}$$

implying

$$X = h^{-\beta} = .7151 \qquad \text{(III.15)}$$

IV. *The Reformulation of the Model to Allow for Gradual and Imperfect Adjustment*

We are now ready to investigate the implications of introducing sluggish adjustments by consumers and producers into the model described in Section III, and dropping the conditions that all markets must be cleared at all times. For this purpose, we shall return to the formulation of the model in terms of discrete periods, since this makes it easier to visualize the differential speeds of adjustments by producers and consumers.

We shall continue to assume that the labor supply for the economy is given exogenously by

$$L_t = L_0(1 + n)^t \qquad \text{(IV.1)}$$

The output is given by the production function, analogous to equation (III.2), of the form

$$Y_t^* = XK_{t-1}^{\beta}E_t^{1-\beta} = .7151K_{t-1}^{.288}E_t^{.712} \qquad \text{(IV.2)}$$

where K_{t-1} is the capital stock in use at the beginning of the period t. This formulation assumes the current investment will, on the average, contribute to output only by the end of the period.

At the same time, we drop the requirement that consumers adjust their assets instantaneously so as to satisfy equation (III.6) at all times. Instead, we return to the consumption function (II.1) as the description of their behavior. The supply of assets in the economy is then given by equations (II.3) and (II.6). As the discussion following equation (II.4) indicates, this formulation can be interpreted as a description of the consumers' behavior in their effort to adjust gradually and asymptoti-

cally their assets to its equilibrium position given by (III.6), in response to changes in the values of the rate of return and income.

Furthermore, the demand functions for capital and labor can no longer be given by the conditions that their marginal productivities be equal respectively to the rate of return and the wage rate. Instead, we shall rely on the modified accelerator suggested by Goodwin [8], Chenery [4], and others [6], [14], and on the value of the equilibrium capital coefficient obtained in the previous section to provide us with an investment function. The "naïve" acceleration principle is given by equation (III,12b), whose discrete form is

$$I_t - \delta K_{t-1} = h[Y_{t+1}^* - Y_t^*] \tag{IV.3}$$

The modified acceleration principle referred to above, on the other hand, has the form

$$I_t - \delta K_{t-1} = g[K_t^* - K_{t-1}] \tag{IV.4'}$$

where K_t^* is the desired level of capital, and the g is the speed of adjustment. Several explanations have been advanced as to why the value of g, the speed of adjustment, is less than one per period. For our purposes, we need not choose among these alternatives. We merely note that, when the variables are measured in terms of yearly rates, the value of g estimated by economists in recent years varied between .10 and .25 for various capital goods, and close to unity for inventory. [2], [13], [16]. Since we do not have inventory explicitly in our model, we adopt the numerical value of .3 as a reasonable average value of g in our discussion.

In the above formulation, the depreciated capital is assumed to be replaced automatically and fully. This seems somewhat unreasonable, especially since in many cases entrepreneurs would not know which part of investment represents replacement and which the net addition to capacity.

We shall therefore modify equation (IV.4′) slightly and write

$$I_t = g[K_t^* - (1 - \delta\mu)A_{t-1}] + (1 - \mu)\delta A_{t-1} \tag{IV.4}$$

where $(1-\mu)$ is the proportion of the depreciated capital that is in fact replaced in routine fashion. Since the behavior of the model that emerges will not depend crucially on the value of μ, we will assume, somewhat arbitrarily, that this value is .5. The symbol A_{t-1}, the total capital in existence at the beginning of period t, is substituted for the symbol K_{t-1}, the capital in use, since these two variables are not necessarily equal once full utilization of resources is no longer insured. Note that the value inside the brackets on the right-hand side of equation (IV.4) may become negative (excess capacity), in which case investment will be simply given by $(1-\mu)\delta A_{t-1}$.

Remembering the definition of h as the equilibrium capital output ratio, it is natural to replace K_t^* by hY_t^{*e}, where Y_t^{*e} is the expected output.

The expected output, in turn, must be defined in terms of current or past output. To establish the appropriate relation between the expected and the current outputs, it is useful to visualize the behavior of the system in the situation in which labor force, output, and the initial stock of assets satisfy the condition of equilibrium defined in the previous section.

The saving forthcoming in the period in this situation is given by $na(r, n)Y_t$. If the value of g is unity, then the substitution of $Y_t^*(1+n)$ for Y_t^{*e} in equation (IV.4) will generate net investment precisely equal to saving, and the system will be moving along the equilibrium path. If g is less than unity, however, the substitution of $Y_t^*(1+n)$ for Y_t^{*e} in equation (IV.4) will generate net investment less than saving, and the system cannot be maintained on the equilibrium path of growth. This is because when g is less than 1 the horizon for investment decisions must be longer than a single period. But, if the economy has been growing in the past at the rate n on the average, it is reasonable to suppose that producers take the trend factor into consideration in their investment planning.[4] It can be shown that, for any given values of g and n, if the desired level of capital, K_t^*, is defined by

$$\text{(IV.5)} \qquad K_t^* = hzY_{t-1}^* = h\frac{(1+n)}{g}[n + g + \mu\delta(1-g)]Y_{t-1}^*$$

then the system, starting from a position on the equilibrium path of growth, can move along the equilibrium path indefinitely in the absence of some disturbance from outside. (The substitutions of the past output for the current output reflects the consideration that output of the previous period is the most recent information available to producers when they are making their investment decisions.)

We will now make the most crucial behavioral assumption. While the value of h is a function of the rate of return on assets, its response to changes in the rate of return is relatively slow. We shall therefore assume that the value of h in (IV.4) and (IV.5) is, as a rule, approximately equal to the equilibrium value given in the previous section, (III.2), and it will fluctuate slowly around this value in response to persistent changes in the rate of interest. When the above value of h and the appropriate numerical values for the remaining parameters are substituted, the investment function can be written as

$$\text{(IV.6)} \qquad I_t = 1.1796Y_{t-1}^* - .274A_{t-1}$$

[4] For an alternative explanation in terms of the notion of desired spare capacity, see Chenery [4] and Kisselgoff and Modigliani [12].

The use of the above form of acceleration model as an investment function has been criticized by a number of writers, among them A. F. Burns [3], on the ground that it is too rigid; specifically, it is said that in the economy there exist simultaneously sectors with overcapacity and sectors with a shortage of capacity, which this formulation fails to take into account. It has been shown elsewhere [2] that this criticism can be met if we assume the distribution of rate of utilization of capacity to be known and constant over time. In the special case of the rectangular distribution, the modified acceleration model with the above consideration taken into account is given by

$$\text{(IV.7)}\quad I_t = b_1 Y^*_{t-1} + b_2 \frac{[A_{t-1}(1-\mu\delta)]^2}{Y^*_{t-1}} + b_3 A_{t-1}(1-\mu\delta) + (1-\mu)\delta A_{t-1}$$

where

$$b_1 = \frac{1}{2} gh\left(1 + \frac{1}{2\sigma} + \frac{\sigma}{2}\right)$$

$$b_2 = \frac{1}{4}\,\frac{g}{\sigma h}$$

$$b_3 = -\frac{1}{2} g\left(1 + \frac{1}{\sigma}\right)$$

h, g, $(1-\mu\delta)$ and $(1-\mu)\delta$ are now interpreted as the appropriately weighted averages of the corresponding parameters for the individual firms, and σ is the relative range of the distribution; i.e., the absolute range divided by the mean of the distribution. σ is assumed to be constant, and for purpose of numerical illustrations to have the value of .2.

We are now ready to investigate the behavior of the system when it is not on the equilibrium path of growth. Since there is nothing now to guarantee that the demands and supplies in the various markets will always be equated at equilibrium prices, we must specify how the quantities that materialize are determined. Let the potential maximum output in the economy, $\bar{Y}^*$ (as distinguished from the actual output in the economy, Y^*) be defined by

$$\text{(IV.8)}\quad \bar{Y}^*_t = XA^{\beta}_{t-1}L^{1-\beta}_t = .7151 A^{.288}_{t-1} L^{.712}_t$$

We assume that, in place of equation (III.3), the demand for labor is given by

$$\text{(IV.9)}\quad \frac{E_t}{L_t} = \frac{Y^*_t}{\bar{Y}^*_t}$$

and that because of wage rigidity actual employment is completely determined by the demand.

Since both equations (III.3) and (III.5) will not hold necessarily, we must introduce an additional assumption for the determination of the shares of income. We assume that these shares are constant for all periods and given by the long-run solution of the system. In particular, the labor share of gross output is

$$\text{(IV.10)} \qquad \frac{Y}{Y_t^*} = 1 - \beta = .712$$

This assumption may appear quite unrealistic, but when we remember that our property income includes both profits, which fluctuate widely, and interest payments, which are very stable, it is not too unreasonable.

Equations (IV.9) and (IV.10) enable us to rewrite our consumption function in the form

$$\text{(IV.11)} \qquad C_t = \alpha_1(1 - \beta)Y_t^* + \alpha_2(1 - \beta)\bar{Y}_t^* + \alpha_3 A_{t-1}$$

We shall initially assume that the values of α_1 and α_2, whose sum was given in (II.1*b*), are such that

$$\text{(IV.11}a\text{)} \qquad \alpha_1(1 - \beta) = .288: \qquad \alpha_2(1 - \beta) = .200$$

We shall later experiment with alternative assumptions.

Let us define the potential demand for output, $\hat{Y}^*$, as

$$\text{(IV.12)} \qquad \hat{Y}_t^* = C_t + I_t$$

Then the actual output, Y^*, is determined by the following rule, whose common sense should be evident:

$$\text{(IV.13}a\text{)} \qquad Y_t^* = \hat{Y}_t^* \quad \text{if} \quad \hat{Y}_t^* < \bar{Y}_t^*$$

$$\text{(IV.13}b\text{)} \qquad Y_t^* = \bar{Y}_t^* \quad \text{if} \quad \hat{Y}_t^* \geq \bar{Y}_t^*$$

When condition (IV.13*b*) prevails and therefore the actual output is equal to the potential output, its allocation as between consumption and investment must be determined. Within the framework of our model, this is a fairly simple task. Since consumers, as the owners of the factors of production, receive income equal to the total output, there is no reason why consumers could not purchase total output for the purpose of consumption. Producers can invest only insofar as consumers choose not to consume. Hence, when $\hat{Y}^* \geq \bar{Y}^*$, consumption will be given by the consumption function (IV.11), while investment will be simply the residual,

$$\text{(IV.14)} \qquad I_t = \bar{Y}_t^* - C_t$$

Note that when $\hat{Y}_t^* < \bar{Y}^*$, there will be unused capacity, and the actual volume of capital used is given by substituting demand for output and labor given by equations (IV.9) and (IV.12) back into the produc-

tion function (IV.1) and solving for K. When $\tilde{Y}_t^* \geq \bar{Y}_t^*$, on the other hand, the capital in use is simply the total capital available in the economy.

Finally, we have the definition

$$A_t = A_{t-1} + S_t = A_{t-1} + I_t - \delta A_{t-1} \tag{IV.15}$$

V. *The Behavior of the System Over Time: Some Numerical Illustrations*

Remembering the definition of potential output given by equation (IV.8), substituting equations (IV.6) and (IV.11) into equation (IV.12), and utilizing the switching rules (IV.13), we can rewrite the entire system in the following form, which is especially convenient for computational purposes:

$$\bar{Y}_t^* \equiv .7151 L_t^{.712} A_{t-1}^{.288} \tag{V.1}$$

$$\tilde{Y}_t^* \equiv \frac{1}{.712} [.200 \bar{Y}_t^* + 1.1796 Y_{t-1}^* - .194 A_{t-1}] \tag{V.2a}$$

$$\hat{Y}_t^* \equiv \frac{1}{.712} [.200 \bar{Y}_t^* + .1 A_{t-1}] \tag{V.2b}$$

$$Y_t^* = \bar{Y}_t^* \text{ if } \bar{Y}_t^* \leq \tilde{Y}_t^* \tag{V.3a}$$

$$Y_t^* = \tilde{Y}_t^* \text{ if } \bar{Y}_t^* > \tilde{Y}_t^* > \hat{Y}_t^* \tag{V.3b}$$

$$Y_t^* = \hat{Y}_t^* \text{ if } \tilde{Y}_t^* \leq \hat{Y}_t^* \tag{V.3c}$$

$$C_t = .288 Y_t^* + .200 \bar{Y}_t^* + .08 A_{t-1} \tag{V.4}$$

$$I_t = Y_t^* - C_t \tag{V.6}$$

$$A_t = .96 A_{t-1} + I_t \tag{V.7}$$

The characteristics of the time path of this system can be studied by analytical method, though with considerable difficulty. For the purpose of exposition in this paper, however, it is more convenient and illuminating to work out a few numerical examples, referring to the results obtained by analytical methods from time to time. The first such example is given in Table 1. Values of the variables for period 1 are initial conditions and given arbitrarily. The system is not quite in full employment, and the initial stock of capital is sufficiently small relative to output to generate the upward swing which reaches the capacity level immediately in the second period. Once the system gets to this stage, it will move along the full employment path indefinitely in the absence of some disturbance. The reason for this behavior can readily be explained. Under the switching rules, the second order system associated with condition (V.3a) has two real roots, and one of the roots has the value

TABLE 1

t	L_t	A_{t-1}	$\bar{Y}_t^*$	Y_t^*	I_t	S_t	C_t	$\tilde{Y}_t$
1	100	300.0	98.1	96.0	25.2	13.2	70.8	96.0
2	104	313.2	102.2	102.2	27.3	14.7	74.9	102.4
3	108	327.9	106.3	106.3	28.2	21.6	78.1	109.8
4	112	349.5	111.2	111.2	29.0	22.0	82.2	112.1
5	117	371.5	116.7	115.8	29.4	22.0	86.4	115.8
6	122	393.5	122.2	119.0	28.8	20.9	90.2	119.0
7	127	414.4	127.7	120.1	26.8	10.2	93.3	120.1
8	132	424.6	132.2	120.4	25.3	8.3	95.1	120.4
9	137	432.9	136.5	119.9	23.4	6.1	96.5	119.9
10	142	439.0	140.5	118.5	21.2	3.6	97.3	118.5
11	148	442.6	145.1	116.5	18.5	.8	98.0	116.5
12	154	443.4	149.3	114.1	15.9	−1.8	98.2	114.1
13	160	441.6	153.3	111.8	13.6	−4.1	98.2	111.8
14	166	437.5	156.9	110.1	12.0	−5.5	98.1	110.1
15	173	432.0	161.0	109.9	11.5	−5.8	98.4	109.9
16	180	426.2	165.0	112.3	12.9	−4.2	99.4	112.3
17	187	422.0	169.0	118.5	16.8	−1.0	101.7	118.5
18	195	421.0	174.0	130.5	24.4	7.6	106.1	130.5
19	203	428.6	180.0	150.0	36.5	19.4	113.5	150.0
20	211	448.0	187.4	179.1	54.2	36.3	124.9	179.1
21	219	484.3	196.8	196.8	62.0	42.6	134.8	220.0
22	228	526.9	207.5	207.5	64.1	43.0	143.4	240.8

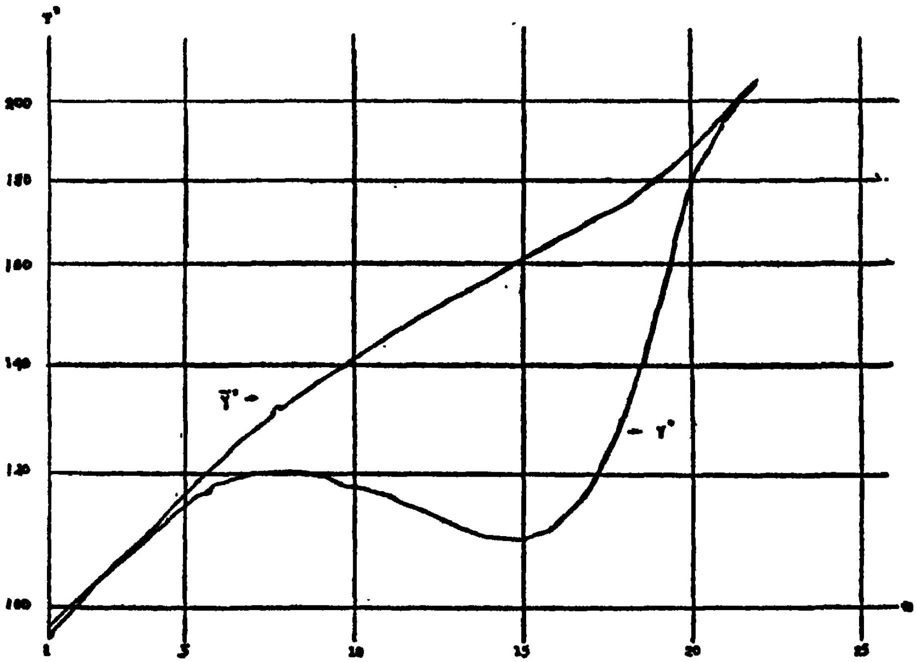


FIGURE 1

$(1+n)$, or 1.04. This is because the parameters of this system satisfy the conditions for the equilibrium path of growth, specified in Section III. The other roots for the numerical values of the parameters given above can be shown to be considerably larger than 1.04. The full employment output, on the other hand, is rising at a rate slightly greater than 1.04, because capital is growing at a rate somewhat higher than this rate. When this set of conditions prevails, it has been shown by S. S. Alexander [1] that the system will move along the ceiling indefinitely in the absence of some disturbance.

However, as time passes, and the system continues to move along the full employment path, the accumulation of capital stock will be at a slightly higher rate than the rate of growth of output (cf. Section II), and the capital output ratio will approach the equilibrium value asymptotically. As a result, the rate of growth of full employment output becomes closer and closer to the smaller root of the system; i.e., 1.04. When this situation is reached, the system becomes very unstable in the sense that any slight disturbance, such as a very minor shift in a parameter of the system or a very small deviation of the actual consumption from that indicated by the consumption function, will be sufficient to make the capital output ratio greater than the desired ratio. (Output cannot be disturbed upward, since all the resources in the system are already fully employed.) When this happens, the system starts to depart downwards from the full employment output.

In the first example in Table 1, this result is brought about by a slower rate of scrapping. For the periods 3, 4, 5, and 6, the rate of depreciation is 2 per cent per period instead of 4 per cent per period. The justification for this is that when producers are faced with a shortage of capacity, they will slow down in scrapping of their capital equipment. This results in faster accumulation of capital stock in these periods, and the system departs downward.

When the total demand is less than the full employment potential output, Y_t^* is not the same as Y_t^*. The system then has a different set of roots, and for a reasonable range of values of the parameters, they are complex, and the modulo of the roots is greater than unity. Hence the system will exhibit a cyclical behavior, and will eventually return to the full employment growth path. In our example in Table 1, it returns to full employment path in period 22.

Under the specifications given in equations (V.1) to (V.7), both periodicity and amplitude of the cycle depend on the initial conditions, and the specific behavior of cycles must be studied for each case by working out the examples in full.

It may be argued that the assumed reduction in the rate of depreciation is unrealistic, since when the equipment is fully utilized, wear and tear will be greater. This point is debatable, but need not detain us

TABLE 2

t	L_t	A_{t-1}	$\bar{Y}_t^*$	Y_t^*	I_t	S_t	C_t	$\hat{Y}_t$	$\hat{\hat{Y}}_t$
1	100	315.0	100.0	99.0	25.3	12.7	73.7	99.0	
2	104	327.7	103.5	103.5	26.8	13.7	76.7	103.8	
3	108	341.4	107.6	107.6	27.8	14.1	79.8	108.8	
4	112	355.5	111.7	117.9	28.8	14.6	82.9	111.8	
5	117	370.1	116.6	115.9	29.6	14.8	86.3	115.9	
6	122	384.9	121.5	120.1	30.5	15.1	89.6	120.1	
7	127	400.0	126.4	124.2	31.3	15.3	92.9	124.2	
8	132	415.3	131.3	128.1	31.9	15.3	96.2	128.1	
9	137	430.6	136.2	131.7	32.3	15.2	99.4	131.7	
10	142	445.7	141.2	134.7	32.3	14.5	102.4	134.7	
11	148	460.2	146.7	137.0	32.0	13.6	105.1	137.0	
12	154	473.8	152.2	138.4	30.9	11.9	107.5	138.4	
13	160	485.7	157.5	138.6	29.3	9.9	109.3	138.6	
14	166	495.6	162.7	137.2	26.8	7.0	110.4	137.2	
15	173	502.6	168.2	133.9	23.2	3.1	110.7	133.9	
16	180	505.7	173.3	128.3	18.5	−1.7	109.8	128.3	
17	187	504.0	177.9	119.9	12.4	−7.8	107.5	119.9	
18	195	496.2	182.5	116.3	9.9	−9.9	106.4	108.4	116.3
19	203	486.3	186.7	115.8	9.7	−9.7	106.1	107.0	115.8
20	211	476.6	190.8	115.2	9.5	−9.5	105.7	109.9	115.2
21	219	467.1	194.8	114.7	9.3	−9.3	105.4	112.5	114.7
22	228	457.8	199.3	115.4	10.0	−8.3	105.5	115.4	114.3
23	237	449.5	203.8	120.1	13.0	−5.0	107.1	120.1	
24	247	440.0	209.1	131.3	20.0	2.2	111.3	131.3	
25	256	446.2	214.8	151.9	32.6	14.8	119.3	151.9	
26	266	461.0	222.9	186.1	52.9	34.5	133.2	186.1	
27	277	495.5	234.2	234.2	80.3	60.5	153.9	239.5	

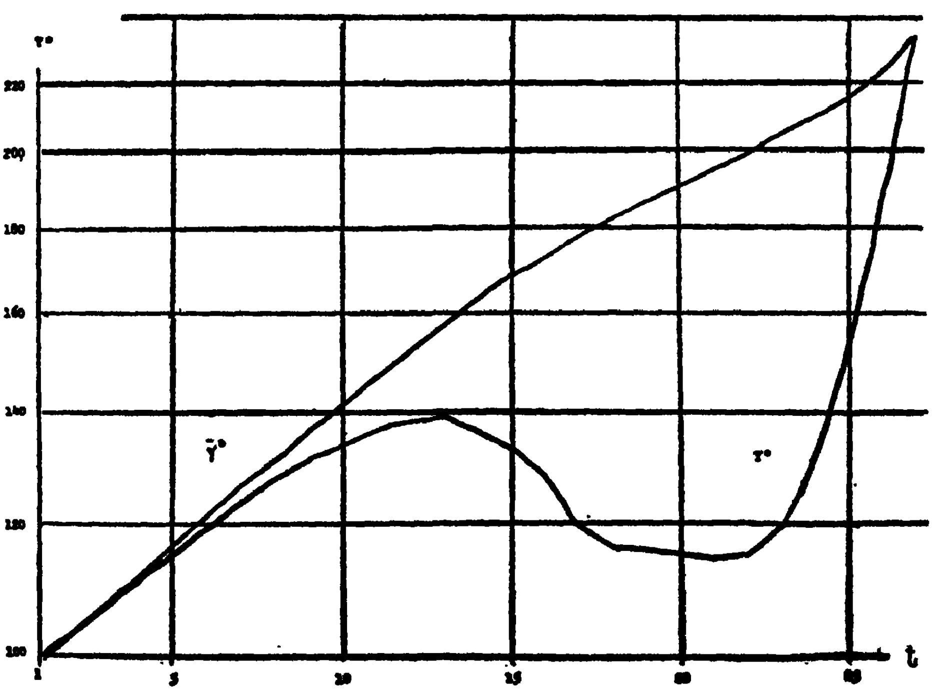


FIGURE 2

here. For the crucial mechanism that causes the downturn is the eventual overaccumulation of capital rather than the slower rate of depreciation. This will become evident through other examples where the turn is brought about without resort to this particular assumption.

Throughout the previous example, we have assumed that the capital coefficient remained constant at the long-run equilibrium value. Note, however, that when the system is moving along the full employment growth path, with the potential aggregate demand in excess of full employment output, the excess demand manifests itself entirely in the capital market, where producers are unable to secure enough output to satisfy their potential demand for investment. Under this condition, the resulting tightness in the capital market will sooner or later lead to a rise in the price of capital. As this situation persists more than a few periods, the long-term expected rate of return on assets will eventually rise, and, hence, the capital coefficient can be expected to become slightly smaller.[5] Under this condition, the stock of capital must eventually overaccumulate, leading to an abatement of investment, and causing the system to depart from the full employment growth path. Furthermore, overaccumulation is bound to occur. For the other possible way to eliminate the excess demand in the capital market is to suppose that consumption is somehow kept below the level indicated by the consumption function (IV.11). But, in this case, capital must again accumulate slightly faster than is consistent with the maintenance of full employment growth.

These propositions are illustrated by the example given in Table 2. The system underlying this table is the same as that used in Table 1, except that in place of equation (IV.11*a*) we assume

$$\text{(IV.11}b\text{)} \qquad \alpha_1(1-\beta) = .338 \qquad \alpha_2(1-\beta) = .150$$

The system again starts from arbitrary initial conditions for period 1, and reaches the full employment output in period 2. This time, however, instead of lowering the depreciation rate, the capital coefficient is reduced by about .02 in period 4. In period 5, the system starts to depart from the full employment output, and this time the swing is very large, and hits the bottom around period 20. In the meantime, the capital coefficient is restored to the equilibrium value in period 17. The system eventually turns around and returns to the full employment output in period 27.

In Table 3, the above example is modified by the substitution of the investment function (IV.7) for the function (IV.6). We start off in the identical manner, and then reduce the capital coefficient in period 4 by

[5] This point can be more readily appreciated in the framework of the monetary economy, as will be shown in a later paper. In this paper lack of space has prevented us from developing the monetary aspect of the model.

TABLE 3

t	L_t	A_{t-1}	$\bar{Y}_t^*$	Y_t^*	I_t	S_t	C_t	$\bar{Y}_t$
1	100	315.0	100.0	99.0	25.3	12.7	73.7	99.0
2	104	327.7	103.5	103.5	26.8	13.7	76.7	103.8
3	108	341.4	107.6	107.6	27.8	14.1	79.8	108.8
4	112	355.5	111.7	111.7	28.8	14.6	82.9	111.8
5	117	370.1	116.6	115.9	29.6	14.8	86.3	115.9
6	122	384.9	121.5	119.8	30.3	14.9	89.5	119.8
7	127	399.8	126.4	123.6	30.9	14.9	92.7	123.6
8	132	414.7	131.3	127.1	31.3	14.7	95.8	127.1
9	137	429.4	136.1	130.3	31.5	14.3	98.8	130.3
10	142	443.7	141.0	133.2	31.5	13.8	101.7	133.2
11	148	457.5	146.5	138.0	32.8	14.5	105.2	138.0
12	154	472.0	152.0	143.4	34.4	15.5	109.0	143.4
13	160	487.5	157.7	149.8	36.5	17.0	113.3	149.8
14	166	504.5	163.5	157.4	39.3	19.1	118.1	157.4
15	173	523.6	170.2	166.5	42.8	21.9	123.7	166.5
16	180	545.5	177.1	177.1	47.5	25.7	129.6	177.8

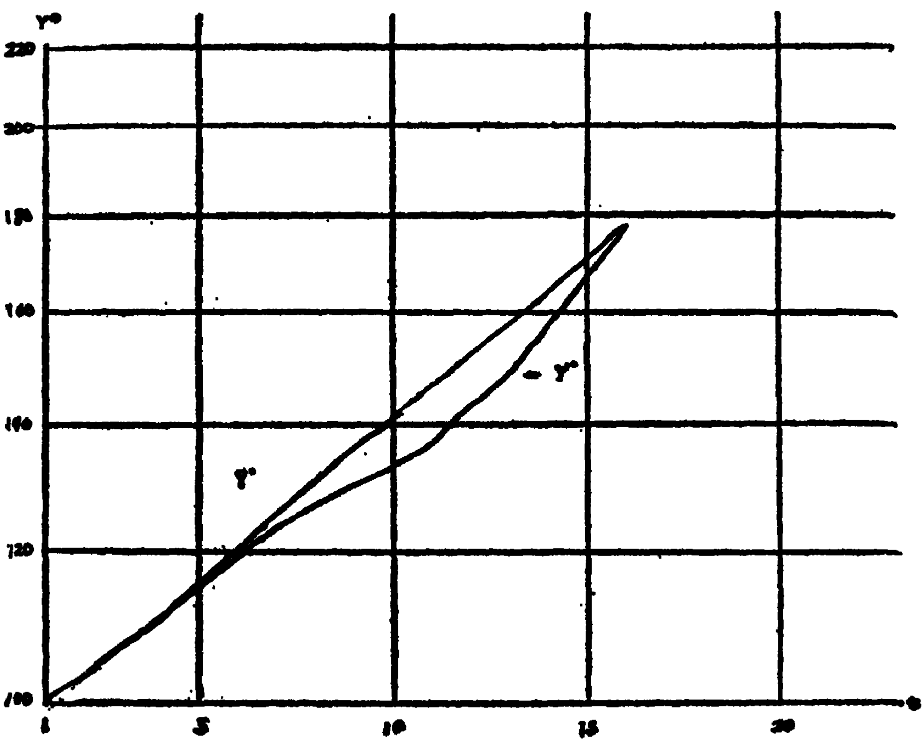


FIGURE 3

.02, and still further by .01 in period 5. But, because of the substitution of investment functions, the level of investment is maintained at a slightly higher level. As was shown elsewhere, this difference becomes more significant as the rate of utilization of capacity declines. Thus, in our example, the system never departs from the full employment output as much as it did in Table 2. In fact, the absolute level of output never falls at all. It returns to the full employment output in period 16. It would have gone back even sooner if the second reduction in capital coefficient in period 5 had not been made. Thus the substitution of equation (IV.7) for equation (IV.6) in this instance has a greatly stabilizing effect on the behavior of the model, and probably makes it more realistic.

Throughout our example, we have assumed a constant state of technological knowledge. It should be clear, however, that technological changes of neutral saving type, as represented by increase over time in the scale factor, X, in the production function, could be incorporated into our models with very minor changes. The rate of growth of full employment income could then be reinterpreted as arising at least in part from the increased productivity of both factors.

VI. *Concluding Remarks*

The model we have constructed is an extremely simple one, and cannot be considered as representing the structure of the mid-twentieth century U.S. economy in its whole complexity. No economist would be naïve enough to believe that a simple, self-generating model of business cycles such as the one we have constructed can by itself perform such a Herculean task.

Nevertheless, we feel that a simple model such as ours is far from useless. We expect our model to play a modest, and yet important, role in the study of economic fluctuations and growth; namely, to serve as a basic framework in which the implications of various additional hypotheses can be studied in a reasonably systematic manner. To qualify for such a role, a model must possess a certain characteristic that can also be observed in the advanced capitalistic economies. One of the most conspicuous features of the U.S. economy in the past hundred years or so is that, with the exception of the thirties, in terms of relatively long period averages the effective demand has tended to be maintained at the level consistent with full employment of labor and other resources, while in the short run, considerable fluctuations of demand have been experienced. It is our feeling that in this respect the models of business cycles proposed in recent years are at variance with reality. We suggest that the price mechanism is not so efficient to insure full employment of resources at every instant of time, but its impact is strong enough to

prevent the economy from developing very substantial and prolonged unemployment under normal conditions.

Our model, built largely as a reflection of the above consideration, is found to exhibit the behavior over time that is more or less in agreement with the observed behavior of the U.S. economy in its broad characteristics. Its equilibrium growth path, unlike that in Hicks's model, implies full employment of resources. When it is recognized that producers' and consumers' efforts to adjust their capital stock take finite periods of time, it becomes inevitable that the economy departs from the full employment growth path, creating unemployment of resources. However, once the system is off the equilibrium path of growth, there are forces at work which would eventually bring the system back to the state of full employment. In our simple model, the only possible mechanism which may prevent the system from returning to the full employment growth path, creating the state of severe and prolonged unemployment, is a possible downward adjustment of expectations by producers and/or consumers.

As stated in Section I, these cycles may differ considerably from each other in terms of duration, amplitude, and other relevant characteristics, depending upon the conditions in which the system finds itself when it departs from the full employment growth path. Thus, as we shall show in a later paper, the introduction of inventory and production decision rules into the system, which causes minor disturbances along the equilibrium growth path, is found to be of great interest in defining the characteristics of the larger cycles of the type discussed in this paper.

The model can be obviously enriched in a number of ways. In a later paper, we shall show how such important considerations as more than one kind of output and capital, monetary system, and government can be incorporated into the simple model presented in this paper.

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THE DEMAND FOR MONEY: SOME THEORETICAL AND EMPIRICAL RESULTS*

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The paper of which this is a summary describes the secular and cyclical behavior of the stock of money in the United States in relation to income and prices, points out that the secular behavior is in the first instance inconsistent with the cyclical behavior, suggests a theoretical explanation of the discrepancy, tests the explanation quantitatively, and speculates on some of the broader implications of both the empirical findings and the suggested explanation.

1. *The Contrast between the Secular and Cyclical Behavior of the Stock of Money.* Over long periods, real income per capita and income velocity (the ratio of income to the stock of money)[1] tend to move in opposite directions; over reference cycles, in the same direction. In both cases, as it happens, the percentage change in velocity is about four-fifths of the percentage change in per capita real income. Over long periods, changes in the nominal stock of money dominate, at least in a statistical sense, the swings in money income, and the inverse movements in velocity are of minor quantitative importance, so that the long swings in prices mirror faithfully the long swings in the stock of money per unit of output. Over reference cycles, changes in velocity are in the same direction as changes in the nominal stock of money and comparable in quantitative importance in accounting for changes in money income and in prices.

2. *A Suggested Explanation.* A possible way to reconcile these results is suggested by my earlier work on the consumption function.[2] Suppose that the quantity of money demanded is adjusted to the anticipated longer term level of income that I have labeled "permanent income" rather than to the annual income figure estimated by statisticians that I have labeled "measured income." Suppose further that holders of money evaluate their holdings in terms of anticipated longer term prices, "permanent" prices, rather than current or "measured" prices.

* To be published in full in the August, 1959, issue of the *J.P.E.* In addition, it will be reprinted by the NBER in its series of "Occasional Papers."

The paper reports on part of a broader study being conducted under the auspices of the NBER by Anna J. Schwartz and myself. I am indebted to Mrs. Schwartz for much assistance in connection with it.

[1] In these and later statements, "money" is defined as including currency held by the public, adjusted demand deposits, and time deposits in commercial banks; "income," as net national product.

[2] Milton Friedman, *A Theory of the Consumption Function*, a publication of the NBER (Princeton Univ. Press, 1957).

This interpretation is directly consistent with the secular results. The income and price figures entering into these results are averages over whole reference cycles. Though not estimates of the permanent magnitudes—since these are defined not as averages over any specified period but as anticipated values—they are closer approximations to permanent magnitudes than are annual values. In any event, the long time period covered assures that the secular relations are dominated by the permanent components of income and prices. For cyclical analysis, permanent income and permanent prices need not themselves be stable over the cycle. Presumably, however, they will rise less than the corresponding measured magnitudes during expansions and fall less during contractions. Hence, if money holdings were evaluated at permanent prices and adapted to permanent real income, they might rise and fall more than in proportion to permanent income, as is required by our secular results, yet less than in proportion to measured income, as is required by our cyclical results.

3. *Tests of the Explanation.* Two related tests of the explanation have been made.

In order to reconcile the secular and cyclical results quantitatively as well as qualitatively, the cyclical movement in permanent income and permanent prices would each have to average 23 per cent of that in measured income and measured prices for mild depression cycles and 37 per cent for deep depression cycles. Independent estimates of these percentages were obtained by using some results from my earlier work on consumption. I there concluded that an estimate of permanent income for any time unit could be obtained from a weighted average of past values of measured income, the weights declining exponentially as one departs further from the time unit in question. Further, I constructed numerical estimates of the weights. These same numerical weights were applied to the annual income and price series used in the money analysis. The resulting approximations to the permanent magnitudes turned out to have cyclical movements equal to the following percentages of those in the measured magnitudes: mild depression cycles —income 19, prices 16; deep depression cycles—income 29, prices 30.

These results were sufficiently encouraging to justify seeing how far the suggested interpretation is consistent with not only the size of the cyclical movement in cash balances and measured velocity but also their entire cyclical patterns both on the average and cycle by cycle. Accordingly, a demand equation relating per capita real cash balances (evaluated at permanent prices) to per capita real permanent income was computed from average values for complete reference cycles. This was then combined with the estimated annual values of the permanent magnitudes to estimate for each year desired cash balances and the

value of measured velocity that would be observed if actual cash balances equaled desired balances as so estimated. Cyclical patterns were then constructed from these computed cash balances and computed measured velocities and compared with the patterns of the corresponding observed magnitudes. The agreement is extremely good, a result that is particularly impressive because the computed cyclical patterns are based on evidence that is completely independent of the observed cyclical patterns.

4. *Some Implications*. With respect to monetary theory, these results suggest that motivations and variables linked with "assets" and the role of money as an asset are the major factors accounting for changes in cash balances, either desired or held, rather than "transactions" or "speculative" motives. They render it highly dubious that the amount of cash balances held is highly sensitive to "the" or "a" rate of interest.

With respect to the study of business cycles, the empirical importance of cyclical changes in velocity has fostered the view that changes in the stock of money are not of major independent importance in cyclical change. This view may of course be correct but it needs re-examination in light of our finding that most of the observed velocity movement can be regarded as a statistical artifact. Moreover, the cyclical pattern in velocity that needs explanation is the residual movement corrected for the deviation of measured from permanent income, and measured from permanent prices.

With respect to monetary policy, our results suggest that monetary policy may be expected to operate rather more than would otherwise be supposed through the direct effects of changes in cash balances, which is to say, in the stock of money, and rather less through indirect effects on rates of interest, thence on investment, and thence on income. They raise the possibility that the economy may be highly sensitive within short periods to changes in the stock of money: the short-run money multiplier may be decidedly larger than the long-run money multiplier. Relatively small changes in the stock of money, properly timed and correct in magnitude, may be adequate to offset other changes making for instability. On the other hand, relatively small changes in the stock of money, randomly timed and sized, may equally be an important source of instability. If the reaction mechanism I have described is in any substantial measure valid, our system may not have a large tolerance for mistakes in monetary management.

DISCUSSION

James S. Duesenberry: Professor Friedman has given us, as he always does, a very stimulating paper which raises some important issues in the theory of demand for money. His paper contains some important new insights into the nature of cyclical fluctuations in demand for money.

However, I had some difficulty in following his argument because he deals with the demand for currency, demand deposits, and commercial bank time deposits without any reference to the demand for close substitutes for those things; e.g., deposits in mutual savings banks and savings and loan associations for households and holdings of Treasury bills for businesses. This does not seem consistent with the approach which he himself took in his restatement of the quantity theory in "The Quantity Theory of Money—A Restatement" (in *Studies in the Quantity Theory of Money*, published by the University of Chicago Press, 1956).

It may be helpful to try to restate what Professor Friedman has said in terms of statements about demand for liquid assets as a whole and for various subtypes of liquid assets.

The real contribution which Friedman makes is the proposition—which I have read into his paper—that the demand for liquid assets (at given interest rates) does not decline in proportion to the decline in transactions during cyclical movements of income. That seems very plausible when one stops to think of it. To mention only one consideration, it seems clear that a large part of the demand for liquid assets stems from a desire for protection against the variance of the difference between cash inflows and cash outflows. Estimates of the variance are likely to increase rather than decrease when income declines cyclically. With no interest rate movement, then, we should expect that the demand for liquid assets as a whole would decline by a smaller proportion than income during a cyclical decline in income. Professor Friedman has done a real service in drawing our attention to that consideration.

At the same time, however, we should expect that the demand for liquid assets for immediate and predictable transactions would decline more or less in proportion with the decline in income. Even if the total demand for liquid assets did not decline at all during a cycle, we should expect that at given interest rates there would be a shift in the composition of the demand—a shift away from the forms with low interest yield and low transactions cost to those with higher yields and higher transactions costs. That is, we should expect a shift toward Treasury bills and time deposits. If the supply of bank reserves remains unchanged, such a shift in demand would produce an actual increase in the volume of time deposits and a fall in the yields on Treasury bills. That is exactly what happened in the depression of the thirties and in postwar recession.

Professor Friedman appears to feel that we need not take account of interest rates because the cyclical timing of interest rate movements does not correspond to the timing of the movements of the ratio of money supply to income. The interest rates he uses are those on private securities which are

subject to credit risk. The rate which is relevant for a theory of liquid asset demand is the rate on securities with neither credit nor market risk; i.e., the rate on securities like Treasury bills. The Treasury bill rate movement fits the picture I have drawn very well.

Finally, Professor Friedman makes a good deal of the correspondence between the movements of demand for "money," i.e., currency demand deposits and commercial bank time deposits, and his estimates of the movement of permanent income. If the correspondence were exact, some special significance might attach to these comparisons. But a rough correspondence does not imply anything more than the obvious fact that the supply of money does not decline in proportion to current income and neither does "permanent income" (by definition).

To summarize, it seems to me that Professor Friedman has made a significant contribution in suggesting that demand for liquid assets should not be expected to decline in proportion to income (at fixed interest rates) during cyclical contractions. That consideration reduces the tendency for long-term interest rates to fall when income falls and therefore reduces the extent to which "speculative" considerations have to be used to explain why long-term interest rates do not fall enough to either stimulate investment and so maintain the level of income or go to zero. That is an important and well-taken point. But as I have indicated, I think it could be stated more clearly in an analysis of demand for liquid assets and its composition.

Modigliani and Ando have made a real contribution to business cycle theory in this paper. The problem of finding a model which generates cycles and still maintains a secular balance between the supply and demand for factors has now become a classic one. The approach taken in this paper is certainly an ingenious one and much more elegant than that used in other attempts to solve this problem.

A model of this type is not meant to be "realistic" in detail. It is supposed to be based on assumptions which produce results broadly similar to those which would be produced by a much more detailed "realistic" model. It would be unfair, therefore, to criticize the realism of the details of the model. We must confine ourselves to the broad outline.

If we grant the basic assumption of the model, there is still one difficulty. The parameters of the short-run difference equation model used in the numerical examples were chosen in such a way that one of the roots of the equation would correspond to the equilibrium rate of growth of the original neoclassical growth model. The authors argue "that the price mechanism is not so efficient as to insure full employment at every instant of time, but its impact is strong enough to prevent the economy from developing very substantial and prolonged unemployment under normal conditions." They therefore assume that the prices are consistent with the long-run equilibrium growth path and leave them constant. But there is no reason to suppose that the prices will be consistent with the equilibrium growth path unless they respond to market forces. If they do respond to market forces, they will change whenever there is a major depression. Once the prices depart from the equilibrium path they will change the dynamic properties of the income

generation system (represented here by the second order difference equation). I cannot see anything in the model which assures that once the system departs from its equilibrium growth path it will return to it. It may be that it would, but one cannot tell without an explicit analysis of the price mechanism.

As I have already indicated, this is one of the class of cycle models designed to explain the cycle while still permitting secular balance in the supply of and demand for labor. The explanation given by the authors is a very elegant one, but it may be unnecessarily complicated. They assume that the rate of growth of the labor force is predetermined, so that the rate of growth of demand must be adjusted to the rate of growth of labor force. Historically, in most industrialized countries it may have been the other way around. If the rate of growth of demand for labor exceeds the rate of natural increase of the urban labor force but falls short of the maximum feasible increase from immigration and shift of labor from farm to city, no very delicate adjustment of relative prices may be necessary to insure balance of supply and demand in the labor market.

The Modigliani-Ando model is a very elegant one and though I have some misgivings about its realism, there is no doubt that it takes us a step forward in the analysis of cyclical processes.

OPEN COMPETITION

INTRODUCTORY REMARKS

WILLIAM J. FELLNER, *Chairman*

The two principal papers presented in this session were the winning papers in the Association's Open Competition which was announced in the March, 1958, issue of the *American Economic Review* (page 254). This was the second competition of its kind. The first was held in the preceding year, on the initiative of Professor Morris A. Copeland, who at that time was the president of the Association.

The papers submitted in the Open Competition of 1958 were first screened by a committee consisting of Professors John H. Kareken, University of Minnesota; Samuel M. Loescher, University of Indiana; G. Warren Nutter, University of Virginia; Oscar Ornati, The New School; John H. Power, Williams College; and Anthony M. Tang, Vanderbilt University. Subsequently, a committee consisting of Professors Lloyd G. Reynolds and Richard Ruggles, of Yale University, and myself, selected the winning papers from among those referred to it by the screening committee. These papers were identified by a code number, and the members of the committees made their selections without knowing the names of the authors.

Professor James W. McKie, of Vanderbuilt University, performed the functions of the secretary to the committees of judges.

The next Open Competition, which is to be held in 1959, was announced in the March, 1959, issue of the *American Economic Review.*

AN EMPIRICAL MEASUREMENT OF THE BUILT-IN FLEXIBILITY OF THE INDIVIDUAL INCOME TAX

By LEO COHEN
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For several years there has been a continuous controversy among economists and others concerning the appropriate use of discretionary tax policy versus the reliance on automatic stabilizers. Furthermore, in both theoretical and empirical attempts to measure the magnitude of these stabilizers, much discussion has centered around the merits of the build-in (or marginal method) versus the elasticity measurement.[1] The basic purpose of this study is to measure and analyze the quantitative importance of the individual income tax as a built-in stabilizer for the years 1948-53, assuming 1953 tax rates and legal provisions for exemptions and deductions. This objective may be realized by testing the Pechman proposition that the built-in flexibility of the individual income tax has been roughly the same and of low magnitude since 1948.[2]

The methodology utilized is a continuation and extension of the Pechman approach. He defined built-in flexibility as the change in tax

[1] R. F. Bretherton, "The Sensitivity of Taxes to Fluctuations of Trade," *Econometrica*, 1937, pp. 171-183, utilized the elasticity method in presenting the first recognized measurement of automatic flexibility, or cyclical sensitivity as he defined it. Victor Edelberg, "Flexibility of the Yield of Taxation—Some Econometric Investigations," *J. of Royal Statis. Soc.*, 1940, pp. 153-179, also utilized the elasticity approach in his multiple regression analysis concerning automatic flexibility. See also R. E. Slitor, "The Measurement of Progressivity and Built-in Flexibility," *Q.J.E.*, Feb., 1948, pp. 309-313; Richard A. Musgrave and M. H. Miller, "Built-in Flexibility," *A.E.R.*, Mar., 1948, pp. 122-128; and James E. Walter, "Tax Sensitivity," *S. Econ. J.*, Apr., 1951, pp. 422-437, for further exposition and emphasis on the elasticity methodology. More recently, economists like Colm and Holland have been critical of the elasticity method, especially with respect to the use of bench marks. See the David W. Lusher paper, "The Stabilizing Effectiveness of Budget Flexibility," in *Policies to Combat Depression*—A Report of the National Bureau of Economic Research (Princeton Univ. Press, 1956), pp. 77-89, and the critical "Comments" by Gerhard Colm, pp. 104-106, and Daniel M. Holland, pp. 115-117 and 119-122.

This author believes that the marginal method is better suited for measuring the sensitivity of aggregate tax yields with respect to changes in aggregate income. The importance of using the marginal method for such aggregative measurements can be illustrated through the use of an arithmetical example.

Case One: Tax yields in three successive periods are 10, 20, and 30, respectively. The corresponding levels of income are 100, 200, and 300.

Case Two: Tax yields in the three same periods are 50, 100, and 150, with the identical levels of income as in case one.

There is a constant elasticity of unity for both case one and two. The marginal method, however, indicates the magnitude of built-in flexibility to be 0.10 for the example in case one and 0.50 under case two. Clearly the tax yields in the second case provide a much stronger dampener on income changes. It is because of this latter point that I stress and utilize the marginal method in making my empirical measurement of the built-in flexibility of the income tax.

[2] See Joseph A. Pechman, "Yield of the Individual Income Tax During a Recession," in *Policies to Combat Depression*, pp. 123-145.

liabilities associated with the change in total adjusted gross income (AGI). Pechman computed built-in flexibility, however, by breaking down the measurement into two components; i.e., the tax base flexibility, defined as the change in taxable income (TI) in relation to change in AGI, or

$$\left[\frac{\Delta\, TI}{\Delta\, AGI}\right],$$

and the marginal rate of taxation, defined as the change in tax liabilities associated with the change in TI, or

$$\left[\frac{\Delta\, T}{\Delta\, TI}\right].$$

Then, built-in flexibility is defined as the product of these two components, thus,

$$\frac{\Delta\, T}{\Delta\, AGI} = \left[\frac{\Delta\, TI}{\Delta\, AGI}\right]\left[\frac{\Delta\, T}{\Delta\, TI}\right].$$

Pechman obtained constancies in both measurements. He found the tax base flexibility to be approximately constant at 0.65. The average rate of taxation was about 0.27, and since the average rate remained unchanged, the marginal rate was equal to the average. Pechman's over-all measurement of built-in flexibility was 0.1755 ($.65 \times .27$).

An extension of the Pechman analysis is made by obtaining the basic data for TI, AGI, and tax liabilities for the years 1951-53, not formerly available to Pechman. A further extension of the Pechman approach is the computation of the distribution of TI by rate brackets. Pechman had indicated that:

> . . . the most important missing link is a distribution of the tax base by rate brackets for past years. . . . Given a series of distributions by rate brackets for past years, it would be possible to determine how the additions to the tax base since the end of the war have been distributed by brackets, and to test whether the marginal rate applying to these additions would have been constant if present rates had been in effect throughout the period.

With this distribution available (as shown in Table 4), the tax liabilities can be computed without making any adjustments for yearly changes in the tax rate structure. Thus the marginal rate of taxation can now be computed more accurately.

Pechman chose to measure the built-in flexibility of the individual income tax through the computation of the two component ratios, because it facilitated his adjustment of the yearly figures of TI and tax liabilities for any changes in the legal provisions concerning exemptions,

deductions, and tax rates. In addition, however, this methodology has significance since it isolates the contribution of exemptions and deductions versus the contribution of a particular tax rate structure.

In computing the first component—the tax base flexibility—the legal provisions for exemptions and deductions are held constant. This measurement isolates the importance of the structure of exemptions and deductions on the built-in flexibility of the income tax. There are essentially two aspects to the problem. First, there is the question concerning the effects of the distribution of exemptions and deductions on the stability of the tax base flexibility.[8] The other aspect to the problem refers to the size of the tax base flexibility (rather than its constancy or lack of it); i.e., the nature of the responsiveness of the tax base to changes in *AGI*.

In defining the second component—the marginal rate of taxation—the legal provisions for exemptions, deductions, and the tax rates are held constant. This isolates the contribution of the 1953 tax rate structure on the built-in flexibility of the income tax. The method of computation also tests the proposition that the personal income tax structure yields a higher effective average rate of taxation as total taxable income increases.

I. *Measurement of Built-in Flexibility*

Tax Base Flexibility. The measurement of the tax base flexibility requires the computation of *TI* and *AGI* on taxable returns. The first step is to compute *AGI* on taxable returns through the use of *Statistics of Income*. Table 1 shows the *AGI* for the years 1948-53.

Pechman used the concept of total *AGI*. Two adjustments are necessary to reconcile Pechman's concept with the one used in this study. First, an estimate of nonreported *AGI* must be subtracted from total AGI. Second, one must subtract also the *AGI* on filed returns which is nontaxable in order to obtain the *AGI* on taxable returns. A more accurate measurement of built-in flexibility may be obtained by using the concept of *AGI* on taxable returns, since the very nature of the derivation of this concept implies less estimation than the one used by Pechman.

Taxable income is defined as *AGI* on taxable returns, less personal deductions and exemptions. Table 1 also shows the *TI* for the years 1948-53. In order to estimate the total *TI* for any year it is thus necessary to have the totals for *AGI*, deductions, and exemptions. *Statistics of Income* do not provide the figures for total deductions. The publica-

[8] It should be pointed out that the structure of exemptions and deductions may also have some pertinent effects on the marginal rate of taxation. *Supra*, see the section on "Explanation and Interpretation of the Findings" with reference to the marginal rate of taxation.

TABLE 1

ADJUSTED GROSS INCOME, TAXABLE INCOME, AND TAX LIABILITIES, 1948–53*
(In Billions of Dollars)

Year	AGI on Taxable Returns	Taxable Income	Tax Liabilities†
1948	$141.502	$ 74.187	$19.637
1949	138.153	71.235	18.444
1950	157.581	83.337	22.203
1951	182.234	98.281	25.632
1952	195.721	106.549	27.084
1953	209.751	114.815	28.645

* The *AGI* and taxable income figures do not include the income subject to alternative tax; the tax liabilities also exclude the alternative tax.
† The tax liabilities are computed on the basis of 1953 tax rates.

tion indicates the totals of itemized deductions and by manipulating the other data, it is possible to compute the amount of total deductions.

The tax base flexibility is obtained by computing the yearly change in *TI* in relation to the yearly change in *AGI* on taxable returns.[4] Table 2 shows that the tax base flexibility was remarkably stable from year to year. The data indicate a low of 0.589 for 1952-53, and a high of 0.623 for 1949-50. The average of the ratios is 0.608.

The tax base flexibility may be computed while holding population constant. The essence of the methodology is to reduce *AGI* and *TI* to a

TABLE 2

TAX BASE FLEXIBILITY, 1949–53

Years	CHANGE (IN BILLIONS OF DOLLARS)		Change in *TI* / Change in *AGI*
	Total Taxable Income*	Adjusted Gross Income* (Taxable Returns)	
1949–50	$12.102	$19.428	.62291
1950–51	14.944	24.653	.60617
1951–52	8.268	13.487	.61303
1952–53	8.266	14.030	.58916

* Based on data in Table 1.

per capita basis. Then it is possible to obtain the ratio shown in Table 2, but on a per capita basis. If this were done, the tax base flexibility would average approximately 0.7 for the years 1949-53. It must be

[4] The 1948-49 measurement is not included in Table 2 because the tax exemption given servicemen during the wartime emergency period was eliminated on Jan. 1, 1949. This change in the tax law was sufficient to understate the *AGI* in 1948 relative to 1949. Taxable income, on the other hand, was less affected. This appears reasonable because personal exemptions and deductions would probably have absorbed most of the servicemen's income even if the income had been taxable in 1948. Pechman, *op. cit.*, p. 133, states that "rough calculations indicate that the built-in flexibility of the tax base between the two years was probably in the neighborhood of .63, if this element of noncomparability is removed."

emphasized, however, that the data indicate a continuous decrease in the flexibility for the period, with a magnitude of 0.62 for 1952-53. A measurement of 0.608 would thus appear to be reasonably accurate in describing its present-day magnitude.

Marginal Rate of Taxation. The marginal rate is defined as

$$\frac{\Delta T}{\Delta TI}.$$

Pechman computed this figure by first correcting the tax liabilities for the period in question. By using a time series from 1948 to 1953, no changes or adjustments were necessary in exemptions and deductions, for the law did not change exemptions and deductions during the 1948-53 period. The yearly tax yields were adjusted, however, on the basis of 1953 rates. Pechman used the corrected tax yields to obtain his constancy of 0.27 for the average (and marginal) rate of taxation.

In Table 3, the marginal rate of taxation is computed after obtaining

TABLE 3

MARGINAL RATE OF TAXATION, 1949–53

Years	Change (In Billions of Dollars)		Change in Tax Liabilities / Change in *TI*
	Tax Liabilities*	Total Taxable Income	
1949–50	$3.759	$12.102	.31060
1950–51	3.429	14.944	.22945
1951–52	1.452	8.268	.17561
1952–53	1.561	8.266	.18884

* Based on data in Table 1.

a breakdown, by each *TI* rate bracket, of the distribution of *TI*. Utilizing this distribution, it is then a simple arithmetical problem to apply the 1953 (or any other) tax rates to the *TI* distributions for each of the years involved. This procedure eliminates much of the guesswork in making the computation.

Table 3 indicates that the marginal rate has varied from a low of 0.176 for 1951-52 to a high of 0.31 for 1949-50, with no clear pattern as to the variations in its magnitude. This variation in the marginal rate exists although the average rate of taxation has remained rather constant, ranging from a low of 0.25 to a high of roughly 0.265. Mathematically, it is possible for small variations in average rates to be associated with substantial changes in marginal rates, especially with the existence of a large denominator. The data in Table 3 indicate clearly this tendency.

Over-all Computation. The final step in the process is to compute the built-in flexibility of the individual income tax; namely,

$$\frac{\Delta T}{\Delta AGI}.$$

For example, the computation would work out as follows for 1949-50.

1. $\frac{\Delta TI}{\Delta AGI} = 0.623$

2. $\frac{\Delta T}{\Delta TI} = 0.311$

3. $\frac{\Delta T}{\Delta AGI} = \left[\frac{\Delta TI}{\Delta AGI}\right]\left[\frac{\Delta T}{\Delta TI}\right] = 0.623 \times 0.311 = 0.194$

From the first equation we may derive a figure for the tax base flexibility (1949-50) as computed in Table 2. Equation 2 shows the marginal rate of taxation (1949-50) which is presented in Table 3. The third equation indicates that the magnitude of the built-in flexibility was 19.4 per cent. Thus at 1953 tax rates, if *AGI* on taxable returns changed by 10 billion dollars, tax liabilities during the 1949-50 period would have changed by 1.94 billion. The built-in flexibility for the 1950-51, 1951-52, and 1952-53 periods was 0.139, 0.108, and 0.111, respectively. The built-in flexibility for the 1949-53 period was approximately 0.14.

II. *Explanation and Interpretation of the Findings*

Size and Constancy of the Tax Base Flexibility. Table 2 indicates that the tax base flexibility was rather stable from 1949 to 1953.[5] The definition of *TI* implies that the stability of the tax base flexibility must necessarily depend upon the behavior of the exemptions and deductions. If both the distribution of the number of exemptions per taxpayer and the average amount of deductions as a percentage of *AGI* remained constant, this would suggest a stable tax base flexibility. Any increase in the number of exemptions and/or the amount of deductions during a given period decreases the size of the tax base flexibility. The statistics show that during the 1949-53 period, the average number of exemptions per taxpayer (on taxable returns) was approximately 1.55, rising slowly from 1.5 in 1949 to 1.59 in 1953. In addition, the ratio of the amount

[5] This same stability is reflected when one computes the breakdown of the tax base flexibility; i.e., the ratio of the change in *TI* to the change in *AGI* on taxable returns per *TI* class. Since the tax base flexibility for most *TI* classes remained rather constant, it is not accidental that the over-all tax base flexibility remained constant.

of total deductions to *AGI* on taxable returns also remained constant at roughly 12.5 per cent. This latter constancy in the deductions also prevailed for each of the taxable income classes, except for slight variations at the very high income classes. Any of the deviations from stable tax base flexibility, aggregate or by income class, may be the result of the existing changes in the distribution of exemptions and deductions.

Table 2 shows also that the magnitude of the tax base flexibility is roughly 0.608. If the size of the tax base relative to individual income were broadened, it would tend to increase the built-in flexibility of the tax base and the individual income tax.[6] This would apply especially to the types of income omitted from the tax base which are highly responsive to changes in economic activity.

The Marginal Rate of Taxation. Pechman, in referring to the 1953 tax rate structure where the first bracket rate was 22.2 per cent, suggested that "it is hardly likely that the marginal rate can be much lower than 25 per cent or much higher than 30 per cent." This conclusion appears logical based on the Pechman methodology, which emphasized the average rate of taxation and the basic data available only through 1950.

There are various factors which tend to explain the behavior of the low and varying marginal rate of taxation (as indicate in Table 3). Since the marginal rate of taxation depends upon the weighted average of the marginal rates for individual rate brackets, it follows logically that, given the tax rate structure, its magnitude must depend necessarily upon the distribution of *TI* by rate brackets. Thus our analysis will be concerned primarily with the pertinent factors affecting the distribution of *TI*.

As gross national product rises, many individuals have *TI* for the first time. Consequently, the incomes of most of these persons will be subjected only to the first bracket rate. The *TI* brackets are also very wide. This implies that as income rises, very few individuals actually move into higher tax brackets. In 1948, the legal provision for income splitting in effect doubled the width of the brackets. For example, a family with two children remains taxable at the first rate bracket even if the family's income is as high as $7,111 (using the standard optional deduction).

The distribution of *AGI* is another important factor. If there is an increase in *AGI* with no change in its distribution, *ceteris paribus*, the marginal rate of taxation would remain constant. If the "Lorenz curve"

[6] See Joseph A. Pechman, "Erosion of the Individual Income Tax," *Nat. Tax J.*, Mar., 1957, pp. 1-25, for an explanation and analysis of the wide gap (and erosion) between the Department of Commerce's concept of personal income and *TI*. He suggests an approach for eliminating most of the concessions now given to various groups and thus increasing the built-in flexibility (as well as equity) in the individual income tax.

of income distribution shifted toward greater inequality, this would raise the marginal rate of taxation because of the progression in the tax structure. In other words, this results in a change in the distribution of *TI*.

Table 4 presents the distribution of *TI* by rate brackets. This table indicates, especially since 1951, a redistribution of *TI* towards the first two income brackets at the "expense" of the tax brackets over $10,000. In fact, the redistribution took place, in many instances, in absolute amounts of *TI* (and tax liabilities) as well as the consistent changes in

TABLE 4

PERCENTAGE DISTRIBUTION OF TAXABLE INCOME BY TAX RATE BRACKETS*

Taxable Income Rate Bracket	1948	1949	1950	1951	1952	1953
0–$2,000	71.94	73.67	71.01	71.74	72.25	72.61
2,000– 4,000	10.88	10.96	11.13	12.30	13.54	14.65
4,000– 6,000	4.43	4.26	4.35	4.26	4.41	4.40
6,000– 8,000	2.73	2.58	2.72	2.34	2.44	2.27
8,000– 10,000	1.87	1.75	1.91	1.70	1.91	1.76
10,000– 20,000	3.94	3.36	4.11	3.73	2.55	2.10
20,000– 50,000	2.64	2.15	2.81	2.45	1.81	1.41
50,000– 100,000	.86	.73	.97	.78	.57	.42
100,000– 200,000	.34	.21	.46	.35	.29	.21
200,000 and over	.37	.33	.53	.35	.23	.17
	100.00	100.00	100.00	100.00	100.00	100.00

* The *TI* figures include the *TI* subject to alternative tax and thus differ slightly from the totals used in Table 1.

relative terms. The 1951-52 and 1952-53 changes for all classes $10,000 and above were also absolute drops. This was so even for the 1950-51 changes in the classes $50,000 and above. These statistics are compatible with our finding of a low and varying marginal rate of taxation.

It is rather difficult to explain the causes of this redistribution of *TI*. Nevertheless, it is clear that the redistribution may be caused by a change in the distribution of *AGI* and/or changes in the structure of exemptions and deductions. Statistics could conceivably show a constant distribution of *AGI* and yet indicate a varying distribution of *TI*, or vice versa. This is reasonable because the distribution of *AGI* is only one factor on which the distribution of *TI* depends. The evidence seems to suggest, however, that there were some factors which tended to change the distribution of *AGI*. For example, dividend income shows a drop absolutely in each *AGI* class, $50,000 and over, between each two years, 1950-53. The statistics also indicate that interest income, which has been an important source for the high-income brackets, has not increased consistently, as contrasted with the large increases in the low- and middle-income brackets for the income received from salaries and wages.

The pertinent question is raised as to whether this redistribution of *TI* can be attributed logically to cyclical or secular causes. If these causes are cyclical, it may then be argued that the measurement of the marginal rate of taxation and the built-in flexibility of the income tax should consider appropriately the implications of the redistribution. On the other hand, if the causes are of a secular nature, why shouldn't one neutralize the distribution of *TI* when computing the measurement of the marginal rate of taxation. This would be comparable to the problem of isolating other variables such as the legal provisions for deductions, exemptions, and tax rates. More specifically, a particular distribution of taxable income would be added to this list of constancies. This, again, would be troublesome since one has little basis for choosing any particular distribution of income.

III. *Summary and Conclusions*

1. The over-all measurement of the built-in flexibility of the individual income tax, at 1953 tax rates, varied from a high of 0.193 (1949-50) to a low of 0.108 (1951-52). A weighted measurement for the 1949-53 period was roughly 0.138. If gross national product rather than *AGI* on taxable returns is utilized as the base, the figures drop by roughly 30 per cent. If personal income is used, the figures are reduced by about 10 per cent. In any event, the magnitude of this measurement implies that there are definite limitations to built-in tax flexibility as a device for promoting economic stability.

2. The tax base flexibility was rather constant at 0.6, as Pechman indicated. Parenthetically, the constancy tends to exist whether or not the income and liabilities subject to the alternative tax are included.

3. Our empirical measurement of the average rate of taxation suggests a negative answer to the proposition that the personal income tax structure yields a higher effective rate of taxation as total *TI* increases. The average rate of taxation remained rather constant at 25 to 26 per cent, regardless of the continuous increases in *TI*. This evidence seems to negate the generally accepted notion that the United States has a high degree of effective progression in the individual income tax structure.

4. The marginal rate of taxation was smaller and not constant (with respect to Pechman's conclusions), as it varied from 18 to 31 per cent. This would appear to be true, especially for short periods of time, utilizing the prevailing distributions of income shown in Table 4.

5. One needs further statistical evidence to verify or refute the proposition that *TI*, per rate bracket, varies inversely with aggregative changes in national income. This hypothesis may have been suggested in the 1951-53 distributions of taxable income. However, the more recent 1954 and 1955 distributions, which are now being computed and pre-

sented in *Statistics of Income,* seem to indicate that there is a new trend of a redistribution towards the high income brackets rather than the reverse. Consequently, the data from 1949-55 do not indicate clearly any necessary relationship between changes in aggregative national income and the distribution of *TI.*

6. It has been suggested that the assumption of a given, constant distribution of *TI* would imply a constancy in the marginal rate of taxation, assuming further constancy in the legal provisions for deductions, exemptions, and tax rates. The magnitude of the marginal rate will depend clearly on the particular distribution of taxable income chosen. For example, if the 1950 distribution were utilized, the marginal rate would be roughly 0.27. The 1952 distribution, however, implies a rate of 0.257, as distinguished from a marginal rate of 0.251 for the 1953 distribution. Thus, a constancy in the distribution of *TI,* chosen from any one of the year's distributions 1949-53, and the 1953 tax rate structure support the cited Pechman proposition that the marginal rate cannot be much lower than 25 per cent or much higher than 30 per cent.

UNITED STATES IMPORTS AND THE TARIFF*

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Since 1934, the stated objective of United States commercial policy has been the stimulation of international trade. The effectiveness of our major vehicle for implementing this policy, the Reciprocal Trade Agreements Program, has often been questioned. In particular, the Congress in its recent inquiry prompted by the proposed extension of the program attempted to determine the effect of tariff reductions on the volume of United States imports.[1] Unfortunately, the lack of accurate and sufficient observations of all the relevant variables has made it impossible to isolate the effect of tariff reductions from the other factors of import demand. Thus we have no accurate measure of the effect of tariff changes alone on import volume.

Dr. Howard Piquet provided a rough estimate of this relationship.[2] He concluded that tariff reductions were significant as a method of import stimulation on the basis of the fact that aggregate dutiable imports—the recipients of tariff reductions—have grown faster than total free imports. Dissimilarities in the commodity composition of the two groups, however, invalidate the necessary assumption of this analysis; i.e., that in the absence of tariff reductions, the behavior of the two groups of commodities would have been substantially the same. Since the free list contains many foodstuffs and raw materials while the dutiable schedule is heavily weighted with manufactures and semimanufactures, one does not have the utmost confidence in seizing upon tariff changes as the major explanatory factor of the observed behavioral differences.[3]

If there were two groups of dutiable imports differing only in the existence of tariff reductions in one of the groups, then one could with more certainty attribute behavioral dissimilarities in import volume between the two groups to differences in tariff history. The present study attempts to analyze the effect of tariff changes in this manner. The tariff reductions resulting from the Torquay Agreement in 1951 were

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1 U.S. Congress, *Compendium of Papers on United States Foreign Trade Policy* (Washington, 1958), pp. 1-3.

2 *Ibid.*, pp. 231-247.

3 For a discussion of Dr. Piquet's paper see: U.S. Congress, *Hearings Pursuant to H. Res. 104, December 2-13, 1957* (Washington, 1958), pp. 144-218.

selected for investigation. Products having tariff reductions at this time made up one group, hereafter referred to as "the reduced group." A "nonreduced group" was compiled from commodities listed in the tariff schedule as having no tariff reduction at Torquay (or Annecy). Foodstuffs and raw materials were excluded from both groups in order both to avoid the problem of agricultural quotas and to focus attention initially on the more price-elastic manufactured goods. The two groups were made comparable by selecting the nonreduced group in such a way as to roughly equate it with respect to commodity composition and base value of imports to the reduced group.[4] A volume index was computed for each commodity for the years 1952 through 1956 inclusive, the base being the average annual volume of trade in 1949, 1950, and 1951.[5]

TABLE 1

INDEX OF VOLUME OF IMPORTS INTO THE UNITED STATES OF PRODUCTS WHOSE TARIFFS WERE REDUCED BY THE TORQUAY AGREEMENT, OF SIMILAR PRODUCTS WITH NO TARIFF REDUCTIONS, AND OF ALL FINISHED MANUFACTURED IMPORTS (1949–51 Average=100)

	Reduced	Not Reduced	All Finished Manufactures*
1949–51	100.0	100.0	100.0
1952	124.3	129.2	124.8
1953	182.7	165.5	133.1
1954	162.5	157.1	133.8
1955	197.0	206.1	160.9
1956	241.2	230.7	194.7

* SOURCE: Statistical Abstract of the U.S.

Aggregate indexes for the two groups were then calculated, each commodity being weighted by its average value of trade in the base period. The results appear in Table 1.

On a priori grounds, one would expect the index of the reduced group to exceed that of the nonreduced group. Depending on the appropriate price elasticity of demand, tariff reductions should increase the volume of imports of the reduced group. The effect of this increase on the aggregate level of imports is the relationship we wish to estimate. A source of bias is introduced, however, since the products of the two groups are, by virtue of experimental design, competitive. The price changes negotiated at Torquay therefore might be expected to increase

[4] A methodological appendix is available upon request which explains in detail the procedure followed.

[5] Data were taken from the following sources: U.S. Bureau of the Census, *United States Imports of Merchandise for Consumption, Report No. FT 110*, Calendar Years 1949 through 1956. U.S. Bureau of the Census, *Schedule A: Statistical Classification of Commodities Imported into the United States* (Aug. 1, 1950, edition corrected to May 1, 1952; and Jan. 1, 1954, edition reprinted July, 1957). U.S. Department of State, *Analysis of Torquay Protocol of Accession, Schedules, and Related Documents* (1951).

the volume of imports of the reduced group at the expense of the nonreduced imports according to their cross-price elasticity of demand. A difference in the indexes may occur making the tariff reduction seem significant, even though the aggregate level of imports has not increased at all.

Both of the calculated indexes show a large and steady growth pattern interrupted only by the recession of 1954. The difficulty in evaluating tariff changes can be appreciated by considering the three indexes in Table 1. A comparison of the index of the tariff-reduced group to that of all finished manufactured imports suggests that much of the increase in trade can be attributed to the existence of tariff reductions. When one compares the index of the tariff-reduced group to the index of the nonreduced group of similar products, however, the same conclusion does not necessarily follow. In some years the former exceeds the latter, but in two years contrary results are found. One can immediately observe that the Torquay tariff reductions were distributed among products in which large increases in demand followed, but most of the increase in imports might have occurred even without the tariff reductions. Over the whole period, the growth of the reduced group does exceed the nonreduced group, as the average annual increase is 28.2 per cent for the reduced group as compared to 26.1 per cent for the nonreduced group. Before any further conclusions can be drawn, the statistical significance of the observed differences between the two calculated indexes must be determined. A null hypothesis was set up for this purpose and a standard "T" test was used. The results are shown in Table 2.

TABLE 2

TEST OF THE SIGNIFICANCE OF THE OBSERVED DIFFERENCES BETWEEN THE INDEX OF THE TARIFF-REDUCED GROUP AND THE NONREDUCED GROUP

	Observed Difference Between Means	Standard Error of Difference	Probability of Observed Difference as Large or Larger Occurring by Chance (1.00=Certainty)
1952	−4.9	9.7	.61
1953	17.2	29.5	.56
1954	5.4	29.8	.86
1955	−9.1	31.3	.77
1956	10.5	57.8	.86

The probability of the observed differences in the means occurring by chance is so large for all the years that the null hypothesis cannot be rejected. From this analysis we must therefore conclude that no significant difference has been demonstrated between the behavior of the tariff-reduced group and that of the nonreduced group.

A number of interpretations of these results are possible. The most obvious one is that the "elasticity pessimists" are correct and the price mechanism for internationally traded goods is insensitive. This explanation is rejected on two grounds. It is not confirmed by the more recent econometric investigations of the United States import price elasticities of manufactured goods,[6] and, second, it does not explain the persistence of the parade of "tariff injured" industry witnesses before Congress. An explanation is required as to why the tariff reductions did not appear more significant in the face of the existence of a relatively high import price elasticity. Five factors will be considered which may help to explain this phenomenon. They are (1) that legislated tariff reductions are minor compared to the reductions resulting from the use of specific and compound tariffs during an inflationary period, (2) that import demand will respond only to large changes in price, i.e., tariffs, (3) that a great deal of excess protection exists which makes tariff levels rather than changes of prime importance, (4) that tariff reductions are made in such a way as to minimize any increase in trade, and (5) that foreign producers are reluctant to increase the supply of products to satisfy the increase in United States demand.

One possible explanation of the results obtained above lies in the fact that over two-thirds of all United States tariffs are in the form of specific duties. When import prices increase and duties are assessed in fixed dollar amounts, the restrictiveness of the tariff declines along with the ad valorem equivalents. Affecting all specific duties, this factor tends to stimulate imports of both groups and therefore dampens the differentiating effect of the legislated tariff reductions.

Some indication of the relative importance of price increases as an influence contributing to the reduction of the ad valorem level of United States tariffs can be obtained by looking at the average ratio of duties collected to the value of dutiable imports. Over the period 1931-35, the average ad valorem tariff under the Smoot-Hawley schedule was 50.02 per cent. The tariff commission has estimated that the average ad valorem equivalent tariff in 1952 would theoretically have been 24.4 per cent if the same Smoot-Hawley rates had remained unchanged.[7] This indicates that a 50 per cent reduction in average tariff levels resulted mainly from the effect of price increases. Since the actual ad valorem equivalent in 1952 was 12.2 per cent, an additional 50 per cent reduction in the level of United States tariffs occurred through the trade agreements program. Therefore, price increases and trade agreements

[6] A. C. Harberger, "Some Evidence on the International Price Mechanism," *J.P.E.*, Dec., 1957, pp. 506-521.

[7] U.S. Tariff Commission, *Effect of Trade Agreement Concessions on United States Tariff Levels Based on Imports in 1952* (Washington, Sept., 1953).

were of about equal importance in reducing the level of United States tariffs.

Again focusing attention on finished manufactured imports, the average ad valorem tariff under the pre-Torquay schedule was 27.4 per cent. Under the new Torquay rates, it amounted to 19.6 per cent ad valorem, a 29 per cent reduction in the tariff level.[8] In 1951, there was also a large increase in the unit value of finished manufactured imports, only slightly reduced in later years. This increase in price represented an 11 per cent average reduction in the ad valorem equivalent of specific rates and roughly an 8 per cent reduction in the average tariff level.[9] While the legislated tariff reductions were a much stronger force in this period, the price increase must have also been important in reducing the restrictiveness of tariffs, contributing to the difficulty of finding a significant difference between the behavior of the reduced and nonreduced groups.

A second explanation may lie in the frequent assertion that import demand is more than proportionately responsive to large price changes.[10] Any change in the source of supply involves certain additional costs: new trade connections must be established, machinery and techniques modified, and psychological aversions overcome. It is likely, therefore, that small price changes will be neglected, while large

TABLE 3

INDEX OF VOLUME OF IMPORTS INTO THE UNITED STATES OF PRODUCTS WHOSE TARIFFS WERE REDUCED BY THE TORQUAY AGREEMENT GROUPED BY THE PER CENT TARIFF REDUCTION
(1949–51 Average = 100)

	Less than 20%	20.0 to 29.9%	30.0 to 49.9%	50.0% and Above
1949–51	100.0	100.0	100.0	100.0
1952	108.0	122.6	192.1	162.0
1953	165.0	173.9	325.1	256.7
1954	143.9	140.7	484.6	253.2
1955	178.8	164.5	607.0	357.8
1956	244.8	192.2	745.1	443.3

differentials will overcome this inertia. Since tariffs are a component of total price, a parallel argument is applicable here.

This thesis was tested by stratifying the tariff-reduced group by the per cent of tariff reduction. The data were combined into four groups and a volume index was calculated for each group over the entire period. These indexes are shown in Table 3.

[8] J. H. Adler, E. R. Schlesinger, and E. Van Westerborg, *The Pattern of United States Import Trade Since 1923* (Fed. Res. Bank of N. Y., May, 1952).

[9] This estimate is based on the assumption that the percentage of products with specific or compound rates in the two groups was the same as for the tariff list as a whole. Actually the percentage was closer to 55 per cent, making the price effect somewhat weaker.

[10] G. H. Orcutt, "Measurement of Price Elasticities in International Trade," *Rev. of Econ. and Statis.*, May, 1950, pp. 117-132.

The results roughly conform to expectation. The increase in trade was clearly much greater for items whose tariffs were reduced more than 30 per cent than the ones with less than 30 per cent reductions, though this relationship is not reflected in the finer subdivisions. The relevance of this relationship to our problem is seen by considering the distribution of the extent of tariff reductions among the several products. While an equal number received reductions greater than 30 per cent or less, the products having the smaller tariff reductions were much more important items in trade, contributing over 90 per cent of the base value. One can conclude, therefore, that no significant increase in trade could be demonstrated in part because tariff reductions on the major commodities were insufficient to produce a vigorous response.

The restrictive nature of tariffs provides a third factor which may help to account for the results of this study. For every product there is a tariff rate which is prohibitive of imports; any rate greater than this can be considered excess protection. A tariff reduction which does not bring the level of tariffs below the minimum prohibitive rate cannot be expected to increase imports. The reduced and nonreduced groups in this study were equated primarily in terms of commodity composition and only secondarily in terms of tariff levels. If the post-Torquay tariff levels were systematically higher in the reduced group, it is possible that the reductions were inadequate to pierce the "prohibitive tariff wall."

Though the minimum prohibitive tariff rate is different for each product, it is very likely that some rough correspondence exists which could be recognized by studying the growth of imports grouped by tariff levels. This stratification was done for both the reduced and nonreduced groups.[11] The number of items and the volume indexes were roughly identical for both groups. The indexes of the reduced group are shown in Table 4.

An inspection of these indexes reveals that with the exception of the lowest division, the tariff level does not appear to be a significant differentiating factor in import growth. The products with tariffs of less than 10 per cent are very large items and already control a significant portion of the total market. For these items, unlike those in the other groups, the tariff is not very restrictive, making the growth of imports dependent primarily upon the growth of final demand without the possibility of increased domestic substitution.

The effect of the level of tariffs is clearly not independent of the percentage of tariff reductions previously discussed. In order to analyze the interaction of these two factors, the reduced group was stratified by the percentage tariff reduction and the new tariff level. The volume

[11] The ad valorem equivalents of the specific and compound rates were obtained through the kind permission of the U.S. Tariff Commission from their working files.

TABLE 4

INDEX OF VOLUME OF IMPORTS INTO THE UNITED STATES OF PRODUCTS WHOSE TARIFFS WERE REDUCED BY THE TORQUAY AGREEMENT GROUPED BY THE NEW LEVEL OF TARIFFS
(1949–51 Average=100)

	New Level of Tariffs				
	Less Than 10%	10.0 to 14.9%	15.0 to 20.0%	20.1 to 30.0%	30.1% and Over
1949–51	100.0	100.0	100.0	100.0	100.0
1952	120.9	130.2	124.8	115.7	156.5
1953	180.7	223.7	143.4	204.1	190.4
1954	139.9	208.9	144.1	250.0	212.1
1955	133.4	248.5	283.6	366.3	263.3
1956	183.9	312.3	236.2	505.9	292.5

indexes of imports in 1956 by these groupings appear in Table 5.

The importance of large percentage tariff reductions is reinforced by this table and the tariff level also appears to have some effect. Large tariff reductions brought forth the greatest increase in trade when applied to products with high tariffs. For these products, the minimum prohibitive level was probably undercut for the first time and thus a significant amount of protection was removed. On the other hand, small tariff changes appear to have the same effect regardless of the tariff level. As already noted, most of the important items had small tariff reductions, so little growth in imports could be expected regardless of the original tariff level.

The fourth explanatory factor is inherent in the nature of the trade agreements program. Even though the Trade Agreements Act states that its purpose is to "expand foreign markets for the products of the United States by affording corresponding market opportunities for foreign products in the United States," it is written in such a way as to make this impossible. This contradiction arises because the Act also prohibits the continuance of tariff concessions which result in products

TABLE 5

INDEX OF VOLUME OF IMPORTS INTO THE UNITED STATES IN 1956 GROUPED BY TARIFF LEVEL AND THE PER CENT OF TARIFF REDUCTION PROVIDED IN THE TORQUAY AGREEMENT
(1949–51 Average=100)

New Tariff Level	Per Cent Reduction		
	Less than 30%	30% or More	No Reduction
Less than 10%	175.6	337.2	208.1
10.0 to 14.9%	275.5	534.8	214.3
15.0 to 20.0%	225.4	376.9	449.0
20.1 to 30.0%	334.0	941.6	190.5
30.1% or more	189.2	839.9	223.2

"being imported into the United States in such increased quantity, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products." While the "escape clause" provision applies specifically to relief from tariff reductions already granted, it also greatly influences the selection of products for tariff reductions.

In 1948, the "peril point" procedure was added to the Act for the specific purpose of preventing the offering of tariff concessions which would reduce the protection below what was required by the domestic industry. Though this procedure was temporarily struck out of the law from October, 1949, to June, 1951, and was therefore not operative during the preparations for the Torquay negotiations, it is hard to believe that previous peril point determinations did not influence the selection of commodities for reductions.

The conflicting provisions of the Act have created within the ranks of economists a certain pessimism about the prospects for increased trade. In this vein, Don Humphrey made the following observation regarding the operation of the trade agreements program: "Tariff concessions have been circumscribed with solicitous care for maintaining essential protection for home industry. The procedure established for screening tariff concessions is expressly designed to reduce the tariff without seriously increasing competitive imports as a result. The heart of the matter is the principle that no domestic industries shall be seriously injured. Much ingenuity has been employed to reduce the tariff without injury."[12]

The ingenuity to which Professor Humphrey referred is demonstrated by the Torquay concessions. The tariff rates on 919 statistical classes of manufactured goods were reduced in this agreement. Of this imposing total, however, 209 items were not imported at all in 1949 (the latest data available to the selection committee), and 86 items were imported in only negligible amounts; i.e., less than $500. The United States had a clear competitive advantage and was a significant exporter for many of these products. Though tariff reductions might have undercut a previously existing prohibitive rate, in point of fact, the United States did not import any significant amount of 154 of the items even by the end of 1956.[13]

The effectiveness of tariff reductions may be further restricted by the subdivision of commodity classifications at the time concessions are granted. This limits the reduction to the country bargaining for it and denies it to other countries whose exports of the same product can in

[12] D. D. Humphrey, *American Imports* (Twentieth Century Fund, 1955), p. 149.
[13] The number of items are not entirely comparable because of the disappearance of many classes through aggregation in 1954.

some way be distinguished. It does not appear as though this was used very extensively in 1951, although 22 such subdivisions were made. It is fairly clear, however, that the Torquay concessions were made with the intention of minimizing any increase in imports. This helps to explain why no significant increase can be demonstrated.

The last factor to be considered can only be summarized here. Many proponents of a liberal trade policy assert that the protection afforded domestic producers goes beyond our tariff rates because of the unwillingness of foreign producers to supply the American market. This reluctance stems from the following facts: Distribution and merchandising are difficult and costly in the United States and thus unlikely to be taken without large profit potentials; exporters fear that if they are successful in entering our market, the tariff will be raised through escape clause action; and the United States customs procedures and regulations are unpredictable, cumbersome, and expensive.

This reluctance is hard to evaluate quantitatively. We have been hearing about it for years, and yet foreign automobiles, bicycles, cameras, plywood, etc., have established themselves and taken a considerable portion of the American market. Escape clause relief has not been given very often in the past, although recently there has been an increase. In addition, the customs simplification law has already removed many customs abuses. It cannot be denied, however, that some reluctance might well be justified. Small tariff changes are not likely to hold out the large profit expectation required to overcome some of these factors.

The results of this study indicate that such tariff reductions as those given by the United States at Torquay do not lead to significant increases in the volume of imports. Some explanations have been offered. This is particularly disheartening to one who is interested in seeing trade increase because, in all likelihood, future tariff reductions will be substantially less than the ones provided for at Torquay. In view of this finding, one may well question whether the battle to extend the Reciprocal Trade Agreements Program is worth fighting. A negative reply would overlook the many advantageous, if secondary, features of the program. The process of negotiating reductions, even small ones, prevents tariffs from going up. The constant pressure on Congress to increase tariffs can be balanced only by a program acting in the opposite direction. While tariff reductions may not have substantially stimulated American imports, neither have tariffs prevented them from keeping pace with the expansion of our economy. The program also has advantages in terms of international relations. The General Agreement on Tariffs and Trade is essentially an American invention and its existence is dependent upon our active participation. Continuance of our

support is a symbol to the world that the United States is committed to a liberal trade policy, if only halfheartedly.

It is clear, however, that the Reciprocal Trade Agreements Act must be substantially changed from its present form if it is to serve as a means of increasing United States foreign trade. Only large tariff reductions can accomplish this and these are effectively prevented by the escape clause, the peril point provision, and the statutory limits put on the amount of tariff reductions. The removal of these limitations without any provision for mitigating the injury to branches of domestic industry that would result from increased trade is politically unthinkable. A practical program for strengthening the Act must therefore begin with the passage of a provision of adjustment assistance for domestic casualties. If such a provision existed, then it would be possible to remove the shackles from our negotiators who could then offer significant tariff reductions. To a nonpolitician, the passage of an effective program of this nature appears only slightly more difficult than the extension of the present Act. The arguments for and against would be essentially the same. In addition, the continuity which such a program requires would relieve our representatives in Washington from the constant pressure that periodic renewals necessitate. It is to be hoped that legislative steps in this direction will be started before another four years elapse.

DISCUSSION

Joseph A. Pechman: Economists have long believed that the built-in flexibility of the individual income tax is substantial. But this expectation has not been confirmed by the data. A quick glance at *Statistics of Income* and at the national income accounts for two successive years should be sufficient to convince anyone who may still be skeptical. For example, total personal income rose 20.4 billion dollars between 1954 and 1955, while individual income tax liabilities rose only 2.9 billion, or 14.5 per cent of the increase in incomes between the two years. Even this overstates built-in flexibility because the tax on capital gains is included in the liability figures, whereas personal income does not include such gains. Omitting the tax on capital gains, the individual income tax offset against the rise in personal incomes between 1954 and 1955 was only 12.5 per cent.

As Dr. Cohen notes in his interesting paper, I first detected this point in a paper which I prepared five years ago. I regarded my conclusions as tentative, however, because I did not have a long enough series of comparable postwar data to work with. With later information at his disposal, Cohen confirms most of the guesses I was forced to make in the absence of firm data and corrects me on one important point.

The built-in flexibility of any tax can be regarded as the product of the built-in flexibility of the tax base and the marginal rate of tax on the change in the tax base. The built-in flexibility of the individual income tax turns out to be low for two reasons: (1) the proportion of a rise in personal incomes that appears in the tax base is surprisingly low—on the order of 55 per cent; and (2) the marginal rate applying to a change in the tax base has never exceeded 31 per cent at 1953 rates and 28 per cent at present rates, and most of the time it has been substantially lower. As a consequence, the maximum observed built-in flexibility of the individual income tax has been no higher than about 17 per cent at 1953 rates (.55 × .31) and 15.5 per cent at present rates (.55 × .28). I was fairly certain of this much five years ago and, as Cohen has pointed out, later data confirm it.

I was wrong, however, in the next step. I observed from the information then available to me that, over a period of years, the built-in flexibility of the tax base and the average effective rate applying to the entire tax base were both roughly constant. I concluded from the constancy of the average effective rate that the marginal rate applying to additions to, or reductions from, taxable income would also be constant. What I failed to realize is that relatively small year-to-year differences in the average effective rate can produce very large differences in the marginal rate. Thus, as Cohen's tables show, using 1953 tax rates, the average effective rates on taxable incomes were 25.9 per cent in 1949, 26.6 per cent in 1950, and 26.1 per cent in 1951. Far from being constant, the marginal rate was 31.1 per cent on the increase in incomes between 1949 and 1950 and 22.9 per cent on the increase between 1950 and 1951.

But, in disclosing my error, Cohen came across a puzzling phenomenon which those of us who follow the data have known for some years. One would suppose that, as incomes rise and taxpayers are pushed up into higher rate brackets, the marginal rate on taxable income would increase. But Cohen finds that in 1951, 1952, and 1953—years in which personal incomes rose substantially—the marginal rate declined. Even more puzzling is the fact that the marginal rate was below the first bracket rate in both 1952 and 1953.

Table 4 of Cohen's paper sheds some light on the puzzle. In this table, he shows a distribution of the tax base by rate brackets for each of the years 1948 through 1953. There were relatively few changes in the definition of taxable income in this period, and none that was of great significance; so the changes he observes cannot be attributed to changes in the tax laws. The first unexpected fact we learn from this table is that the proportion of taxable income in the first bracket rose between 1950 and 1953, even though total taxable income increased by almost 38 per cent.

Cohen observes, correctly, that this can be explained in part on the basis of the peculiar bracket structure used for the purpose of graduating the income tax rates. Nominally, the first bracket rate covers the first $2,000 of taxable income, but for married people who are eligible for income splitting, this means a first bracket of $4,000. Considering exemptions and deductions, a family man with two children does not enter the second bracket until his income exceeds at least $7,111. This is far in excess of the incomes of the vast majority of the nation's families; so that a very large proportion of increases in income must be concentrated in the first bracket. Of course, individuals and families in the higher brackets also receive larger incomes as the national income rises. How the marginal rate behaves depends on the distribution of the increases in taxable income. If the distribution of the increases is the same as the original distribution, the marginal rate will be exactly equal to the old effective rate. It will rise, however, if more of the increase in taxable income is concentrated in the higher brackets and will fall if more is concentrated in the brackets below the average effective rate. Any one of these alternatives is possible. In fact, it is also perfectly possible for the concentration of taxable income in the first bracket to increase even if the Lorenz curve of total income shifts a little toward greater inequality.

Thus, we have an explanation for the decline in the marginal rate between 1950 and 1953. But how can the marginal rate be lower than the first bracket rate when total income rises, as it was in 1952 and 1953? Clearly, this can happen only if taxpayers in the top brackets actually experience declines in income, while those in the lower brackets show increases. This is an unusual situation, but it appears to have happened at some points in the income distribution every year between 1950 and 1953, and the declines were significant enough in 1952 and 1953 to produce a marginal rate below the first bracket rate. Mrs. Selma Goldsmith first pointed this out in an article published in these *Proceedings* two years ago. She found that the number of tax returns declined in all adjusted gross income classes above $200,000 between 1950 and 1951, above $50,000 between 1951 and 1952, and above $30,000 between 1952 and 1953. As a result, Cohen's distributions of taxable income show relative

declines in taxable income for all brackets above $10,000 in 1951, 1952, and 1953, and absolute declines in these brackets in 1952 and 1953.

Both Mrs. Goldsmith and Cohen point out that the decline in the number of high-income taxpayers between 1950 and 1953 was due to a decline in dividends they reported. (Capital gains also declined, but Cohen eliminated most of them from his distributions by excluding gains subject to the alternative tax.) In addition, reported income from estates and trusts also declined in the same years, probably because dividends declined. But the dividends reported on high income tax returns cannot be reconciled with the total dividends paid by corporations in these years. The Office of Business Economics of the Department of Commerce estimates that dividends paid declined from 9,208 million dollars in 1950 to 8,954 million in 1952, and then rose to 9,225 million in 1953. Taxpayers with adjusted gross incomes above $10,000 reported dividends of 4,491 million dollars in 1950, 4,182 million in 1952, and 4,017 million in 1953. In other words, while total dividends rose slightly between 1950 and 1953, the dividends reported by taxpayers with incomes above $10,000 fell more than 10 per cent.

I agree with Cohen that these developments were probably unusual and that it would be unwise to assume that they are normal when total income rises. Data for 1954, 1955, and 1956 show that high-income taxpayers shared in the rise in total dividends that occurred in that period. Thus, there seems to be no basis to assume that the marginal rate on additions to taxable income will, as a rule, fall below the first bracket rate in a year of generally rising incomes. Nevertheless, the curious behavior of dividends between 1950 and 1953 remains a mystery. It is so unusual, in fact, that it warrants serious investigation by the Internal Revenue Service. I have always felt that the gap between the dividends paid by corporations and those reported on individual income tax returns, after adjustment for the amounts accounted for by fiduciaries, partnerships, tax-exempt organizations and non-filers, cannot be explained by underreporting in the lower income classes. It may well be that the explanation of this gap can be found if the peculiar behavior of dividends between 1950 and 1953 is explained.

Returning to the built-in flexibility of the income tax, I think it is important to note that all our measurements are based on years of rising incomes. While *Statistics of Income* are now available covering the first two postwar contractions and expansions, it happens that the data for the very years in which incomes declined are not comparable to the immediately preceding years because of significant changes in the tax laws. Between 1948 and 1949, the income of servicemen became taxable for the first time. And between 1953 and 1954, the tax base was changed as a result of the enactment of the Internal Revenue Code of 1954. It will be necessary to wait until the 1958 statistics are available before we can make accurate measurements of the built-in flexibility of the income tax during a recession.

But something can be said about built-in flexibility during recessions even without the data. Whether or not incomes decline, the population continues to grow, and the exemptions claimed on tax returns increase. When incomes rise, the growth in the number of exemptions tends to reduce the tax base

below what it would otherwise be. And when incomes decline, it tends to augment the decline in the tax base. Consequently, it is a pretty fair guess that the built-in flexibility of the income tax is larger during contractions than during expansions so long as population continues to increase. It is still true, nevertheless, that in a recession the individual income tax in its present form is one of the weakest of the automatic stabilizers we hear so much about, certainly much weaker than the combined effect of unemployment insurance and other transfer payments.

WARREN S. HUNSBERGER: Mr. Krause's paper throws important new light on the efficacy—or, more accurately, the inefficacy—of the Reciprocal Trade Agreements Program as a device for increasing imports. At the same time this paper as presented has both analytical and verbal weaknesses that must be taken into account in evaluating its contribution to the literature.

The central feature of Mr. Krause's work is an analysis of United States imports of two groups of commodities during a recent period. One group includes many of the manufactured products on which the U.S. import tariff was reduced at the Torquay negotiations in 1951. The other group is made up of similar manufactured products on which tariffs were not changed at Torquay. A great deal of effort has evidently gone into the construction of these two lists, in order to make them statistically comparable. On the basis of the information Mr. Krause presents in his Appendix on Methodology, it appears that this effort has been successful and that the two lists may be accepted as being comparable for the analysis which has been made.

Even so, it would be useful to have the full lists, together with such other pertinent information as may be obtainable, including actual tariff rates since 1945. The concessions made to Japan in 1955 when that country was admitted to GATT may be pertinent, and also the items subject to Japanese "voluntary" quotas. As a result of Tariff Commission investigations, it may also be possible to indicate the tariff rate needed for protection in some cases.

Krause's analysis concerns the dollar value of U.S. imports of his two groups of commodities in the years 1952 to 1956. He makes no effort to discover what price changes may have occurred in the two groups of goods, although price reductions are of substantial economic significance, quite apart from their influence on the quantities of goods imported. He simply assumes that import prices reflected fully the tariff changes in his reduced group, and at one point refers to "the price changes negotiated at Torquay."

Mr. Krause's statistics show clearly that imports rose rapidly during the period studied, not only for the goods whose rate of duty had been reduced, but also for the nonreduced group and also for all finished manufactures. Although the reduced group showed the greatest increase, the differences were so small that a test indicated no statistical significance to this difference.

The paper then goes on to analyze more closely the imports of items in the reduced group, according to the amount of the 1951 tariff reductions and according to the tariff levels after the reductions. The figures presented in Tables 3, 4, and 5 add important detail to the picture. Particularly noteworthy, in view of the generally negative character of the findings, are the

figures in Tables 3 and 5, which show that import increases were clearly greatest for those goods whose tariff rates had been reduced by 30 per cent or more. The evidence of these statistics has limited significance, however, because the commodities concerned accounted for less than 10 per cent of the trade of the reduced group in the base year. Nevertheless, Mr. Krause might have made more use of this evidence that some tariff reductions were made which apparently raised the rate of import growth, despite all the limitations and restrictions of Trade Agreements legislation and practice.

The general conclusion of the statistical analysis, then, is that the tariff reductions negotiated at Torquay in 1951 cannot be regarded as a significant factor in the import increases that followed. This conclusion is the paper's principal contribution. The supporting analysis is rigorous and I accept the conclusion as valid. Future debates on the effects of tariff reductions will need to take account of Krause's work.

In the remainder of his paper Krause attempts to explain why the Torquay tariff reductions had no significant effect in increasing imports and, in his final paragraph, to draw conclusions for policy. While some important points are made here, this section has serious weaknesses, and the policy conclusions are by no means proven. Five factors are discussed, of which the first is the effect of price increases in reducing the protectiveness of tariffs levied in the form of specific rather than ad valorem duties. The other factors are the nature of import demand, the tariff level necessary to provide protection, the "no injury" qualifications on permitted tariff reductions, and impediments to marketing vigor on behalf of foreign products. These factors are indeed significant. Together they comprise much—perhaps all—of the explanation sought. But what Krause succeeds in saying within the narrow limits of this paper is too little and too imprecise to be more than suggestive.

To illustrate some of the difficulties involved, let us look at Krause's conclusion with respect to the first factor; namely, that negotiated tariff reductions "were a much stronger force" for reducing tariffs than were price increases in the period under review. To support this conclusion, Krause compares the "average ad valorem tariff" before and after Torquay and finds that the Torquay negotiations resulted in "a 29 per cent reduction in the tariff level." He does not discuss the statistical difficulties of the concept, "average ad valorem tariff," nor does he indicate awareness of the apparent inconsistency involved when he later reports that over 90 per cent of the base value of imports of the reduced group was represented by items whose tariff reductions at Torquay were less than 30 per cent. Before accepting the conclusion that negotiated reductions were "the stronger force," one might also be expected to take account of such matters as the particular tariff level necessary to provide protection in a given case and the fact that no peril point or escape clause limitations affect the workings of inflation, whereas, in Krause's view, "the Torquay concessions were made with the intention of minimizing any increase in imports." To overcome such difficulties it may be necessary to study individual commodities in detail. Such investigations would permit historical and statistical analysis of specific forces and situations relevant to each of the five factors discussed by Krause.

In his comments on future U.S. policy, Krause asserts that "only large tariff reductions can" enable the Reciprocal Trade Agreements Act "to serve as a means of increasing United States foreign trade." This sweeping generalization is not only unproven but almost certainly invalid. In terms of general principle, as Krause himself notes elsewhere, the question of whether a tariff reduction tends to stimulate imports is less a matter of the amount of the reduction than of the relation between actual tariff levels and the level required to provide protection. If a tariff just adequate for protection is reduced, much or all of the protection may be removed by a relatively small reduction, whereas a large reduction may be expected to have little effect if the reduction does not cause the tariff rate to drop below the level required for protection. In terms of actual U.S. imports during recent years, one has only to look at the record to see large increases, even though it is extremely difficult to generalize about their causes.

Large cumulative tariff reductions have already been made during a quarter century of negotiated tariff rates, and at the same time inflation has sharply reduced the burden of specific duties. As a result it appears quite possible that U.S. tariffs are now at a level where further large increases in U.S. imports may be expected in the years ahead. Despite a feeling that the Trade Agreements Program is remarkable for how much tariff reduction has been accompanied by how little increase in imports, Humphrey in 1955, taking note of the reductions already achieved, expressed the view that we might expect "more substantial results in the future, particularly if a high rate of internal growth is maintained and business fluctuations are moderated."[1]

A closely related view, expressed by Piquet, is that after 1947 "tariff cuts began to be felt, in the sense that they stimulated imports."[2] Krause refers to this view and appears to believe he has disproven it. His statistics do indeed provide valid evidence in contradiction of Piquet's view. But Krause's figures also show the sharp increases being experienced in U.S. imports of all manufactured goods. These increases may in some degree reflect earlier tariff reductions, and to this extent Piquet may be correct. Krause's statistical method can help us learn more about this subject. It would be valuable to have comparisons like his for the tariff rates reduced in 1947 and 1949.

A major change in the Reciprocal Trade Agreements Act suggested by Krause is the removal of the limitations of the escape clause. If this change should take place, even without others suggested by Krause and even without any further tariff reduction at all, a very important boost would thus be given to imports. While the escape clause applies, the instability of U.S. tariff rates and the danger of quotas constitute extremely important deterrents to efforts

[1] Don D. Humphrey, *American Imports* (Twentieth Century Fund, 1955), pp. 150 and 151.

[2] Howard S. Piquet, "Tariff Reductions and United States Imports," in *Foreign Trade Policy*, Compendium of Papers on United States Foreign Trade Policy, collected by the staff for the Subcommittee on Foreign Trade Policy of the Committee on Ways and Means (Washington, 1957), p. 231. This point is made again in the same author's *The Trade Agreements Act and the National Interest* (Brookings, 1958), p. 50. This same point is made by Randall Hinshaw in his paper, "International Trade and Payments in an Era of Coexistence: Disequilibrium in the Balance of Payments," elsewhere in the present volume of *Proceedings*.

aimed at developing in the U.S. markets for foreign goods. I can testify to this fact on the basis of information received personally from many Japanese and from a representative group of commercial officials from other countries exporting manufactured goods to the United States.

Continuation of the Reciprocal Trade Agreements Program is, however, not the only possible approach to a constructive American policy on imports. The Trade Agreements Extension Act of 1958 gives to the President the power to lower tariffs by about 20 per cent over a four-year period. This power is limited by a tightened escape clause and various other restrictions, which apply also to earlier tariff concessions. Thus the power given in this Act and related legislation to raise tariffs and otherwise restrict imports is now far greater than the power to lower tariffs and otherwise stimulate imports. This disparity is likely to grow in future extensions of the Act if present concepts are retained. One might ask if the program has not about run its course and if in 1962, when the present authority expires, further continuation of the Reciprocal Trade Agreements Program in its present form would not be less effective for stimulating imports than a new approach that would either make major changes in the program or replace it with something else.

A new approach of an ominous character has already been introduced into U.S. commercial policy. In 1956, after detailed discussions in Washington and in Japan, the Japanese government announced a series of "voluntary" quotas on the export of cotton textiles and textile products to the United States. These quantitative limitations were the result of U.S. initiative and a Japanese feeling that the alternative was even more severe restrictions imposed by the United States. This Japanese action has been followed, in most cases without prior international consultations, by imposition of somewhat similar quotas on about a dozen other Japanese exports to the U.S. Now for a substantial share of U.S. imports from Japan the factor limiting exports to the United States is not the tariff but these quantitative restrictions. They have been imposed without any of the normal procedures of the Tariff Commission, the Congress, or the interdepartmental machinery that administers the Trade Agreements Program. Already some Japanese interests are restive to raise certain quotas. The freedom of action which even tariffs allow is now seriously restricted in the case of our imports from Japan.

A constructive new approach to U.S. imports is long overdue. U.S. economic and political leadership has been weakened in recent years by our commercial policy. Vernon has spelled out this story and suggested new measures the U.S. might take, including ultimately "the economic fusion of the free world's nations."[8] Such strong measures may seem a long way off. Still it is significant that some serious thought is beginning to be given to such lines of action.

[8] Raymond Vernon, "Trade Policy in Crisis," *Essays in International Finance*, No. 29 (Int. Fin. Sec., Dept. of Econ. and Soc., Princeton Univ., Mar., 1958), especially pp. 5-8 and 14-21.

ROUND TABLE ON THE ORGANIZATION AND FINANCING OF ECONOMIC RESEARCH

SEYMOUR E. HARRIS, *Chairman*

ROBERT D. CALKINS: I should like in these brief remarks to ask, in all seriousness, whether we have the appropriate organizational arrangements to conduct economic research, or to finance it, with acceptable effectiveness, not to say maximum effectiveness, for the advancement of knowledge or the use of that knowledge in the conduct of human affairs. In posing this issue, I must ask more questions than can now be answered. But I do so in the hope of provoking the consideration of more promising arrangements than we now have.

At present our "system" for economic research, if such it can be called, consists of: (1) a considerable number of university scholars devoting part time to teaching and part time to research, with occasional interludes for full-time research; (2) a further number of scholars in universities and colleges devoted largely to teaching, with fewer interludes for research; (3) a number of university bureaus and institutes enlisting, as best they can, the time of scholars for research; (4) several independent research institutions with full-time staffs and other scholars enlisted temporarily for their investigations; (5) a growing staff of economists in government and semigovernmental agencies devoted to the study of economic problems and public policy; (6) an expanding research activity on the part of business, labor, and other special interest groups for the purpose of influencing public policy and for the guidance of their internal affairs; (7) an increasing number of consulting firms moving rapidly into the breach to study pressing practical problems that require solution; (8) special commissions of laymen established mainly *ad hoc* to study public problems, with the aid of economists, and to recommend action; and (9) cutting across this structure are the professional societies and the Social Science Research Council. Such, briefly, are the principal operating agencies.

This research structure, for the most part, has developed within a single generation, and philanthropic foundations have played a major role in establishing and supporting it. Economic research in this country became more than an avocation of scholars chiefly as a result of the experience in World War I. Then we found our knowledge of the economy too sketchy for the informed conduct of war. Numerous efforts to gather economic data and to promote economic research followed. In response to the recognized need, the National Bureau of Economic Research was established in 1920, the Food Research Institute in 1921,

the Institute of Economics in 1922 (later consolidated with other organizations to form the Brookings Institution). In the organization and early support of these institutions the Carnegie Corporation played a major part. For the last two named it provided ten-year grants. The Twentieth Century Fund began in 1919 with its own endowment. The Laura Spelman Rockefeller Memorial under the direction of Beardsley Ruml made important contributions in the early support of the Social Science Research Council (1923), the Council on Foreign Relations (1921), the Institute of Pacific Relations (1926), and the allocation of research funds to social science research councils in major universities. Meanwhile, university bureaus of economic and business research began to spring up. Institutes of industrial relations, for the most part, came later as did committees for the study of international relations.

No such wave of new organizations has since occurred. After the National Planning Association in 1934, few new organizations were established until after World War II. The RAND Corporation and Resources for the Future, both organized with the help of the Ford Foundation, are among the more notable agencies of recent origin. Mention should also be made of the Russian institutes and more recent institutes of international studies begun with foundation support.

If we look at economic research over the past thirty-eight years in the scholarly sector, as opposed to that in government, business, and labor organizations, it becomes apparent that a large part of it has been accomplished with the aid of foundation funds. Apart from the universities themselves, the agencies for promoting and conducting such research are creatures of philanthropy, mainly the foundations. Except for that support, economic research today would be in a far more primitive state.

But while acknowledging our great debt to philanthropy, we must not conclude that the philanthropic foundations offer an adequate source of support for the future. The need for economic research is expanding, and in many areas this research will be costly. Foundations funds for the purpose are limited. The social sciences in general and economic research in particular have not had an easy time competing for foundation interest and support. Moreover, foundations regard their function as that of pump-priming, not that of continuing general support. Their objective is to aid strategic advances that cannot otherwise be undertaken. They seek freedom to move where they believe their funds will yield the greatest marginal benefits. Their interests and policies change, and no organization can hope to remain a favorite beneficiary indefinitely. The appearance of new foundations with an interest in economic research is highly unpredictable. While the Ford Foundation has been a

welcome benefactor of economic research and is making notable contributions, it cannot be expected to finance more than a fraction of future research needs and opportunities.

While it is to be hoped that foundations will continue to play an important role in financing economic research in and out of the universities —and there is an important role for them to play—it is clear that funds from other sources must be found. The state universities have begun to enlist the support of state legislatures. Business is contributing increasingly; but for many types of research this source of financing is still suspect and unacceptable. Contract research for government offers both hope and dangers. A possible source of research funds is the National Science Foundation, but last year it awarded only about $600,000 to all the social sciences, out of a total research budget of 35 million dollars. We are told that even this modest sum is not inadequate for the good projects currently received for consideration. Convincing demonstrations of what the social sciences can contribute through research are urgently needed to help make the case for further support from this source. But in the last analysis, what is most needed is dependable support in the form of endowment and reasonably assured income over long periods of years so that an effective system for economic research may be established. This, in the end, will require substantial capital funds for research comparable to those now dedicated to teaching.

But there is a more fundamental problem confronting us that is likely to become a matter of increasing concern. I refer to the strategy and tactics of research. As one who has served as benefactor and beggar, on opposite sides of the philanthropic desk, I may be permitted to raise this question without, I hope, being thought ungrateful or unsympathetic for all that has been done, is being done, and may be done in the future by philanthropy.

Scholars generally believe that they are the best judges of what research should be undertaken and how that research should proceed. Many feel that if only society would give them ample resources they would advance knowledge in the best, or indeed the only possible, way by pursuing their own interests in research. Given unlimited talent, time, and funds, this is a congenial and proven approach. But we have in fact limited talent, limited funds, and urgencies for which there is limited time. We have in brief an economic problem of allocating limited resources, and hence a strategy is needed for the deployment of those resources to achieve the maximum results. This problem is faced by every thoughtful agency with funds to allocate, and it is a problem for all of those who wish to see economic research advanced.

The scholar, like the scientist, is essentially a tactician who uses the resources at his disposal.[1] He is analogous to the field commander, and in his province he is the best expert. But the tacticians in given sectors do not design the broad strategies of war. This is done by the general staff and the supreme commander, who, with a general view of the resources available and the alternative opportunities for success and failure, determine the deployment of the over-all resources. In this decision they need, of course, all the intelligence they can assemble, and especially that yielded by reconnaissance, probes, and forays of an exploratory sort.

In our research system the strategic deployment of resources for research is practiced mainly by the foundations and the research scholars and agencies are mainly tacticians. Let me elaborate.

In the twenties the Laura Spelman Rockefeller Memorial (before its consolidation with the Rockefeller Foundation) granted funds to major universities for research in the social sciences, to be allocated by their own social science research councils. It had hoped to encourage empirical research by the abler scholars on the most promising projects. Some years later the Rockefeller Foundation made an appraisal of the results of this experiment. It found the funds had been used for a miscellany of projects lacking any systematic integration or concentration. The funds often were not given to the most promising projects or scholars, and campus politics were not inconspicuous in the allocations. Raymond Fosdick, former President of the Rockefeller Foundation, states: "As a result of this report, that part of the older program which concentrated support behind the idea of building up general university research was largely abandoned and the emphasis was shifted to more specific fields of research and application 'in the hope of making a realistic contribution to contemporary problems.' "[2] This shift in policy from general support to grants for specific fields and projects became the accepted procedure not only in the Rockefeller Foundation but in other major foundations as well. Only recently have major exceptions to this policy been made, and most notably by the Ford Foundation.

The significance of this development is that the major foundations, in the discharge of their responsibilities as trustees, elected to become the effective strategists in research without delegating that function. They took over the determination of how the resources would be deployed on many fronts and in particular sectors and left the tactical command to individual scholars and research institutions chosen for support.

These policies have had their consequences. The universities and

[1] For this analogy I am indebted to Mr. David B. Hertz, Director of Operations Research of Arthur Anderson & Co., who has presented it in an unpublished paper.
[2] Raymond B. Fosdick, *The Rockefeller Foundation* (1952), pp. 194-208.

research organizations with limited funds at their disposal have had little opportunity or occasion to develop strategic planning. They have been preoccupied in soliciting resources for their tactical effort. The major foundations (and the Social Science Research Council in some areas) have generally been more broadly aware of research needs and opportunities than have the operating research agencies themselves. This breadth of view is in no small degree the result of having funds to allocate.

In spite of generous project support by foundations, few resources have been available for developing adequate research centers either in the universities or among the independent research organizations. It is no overstatement to say that not a single economic department or single research institution today has adequate resources, in funds or available personnel, to make more than a limited contribution to the expanding needs for economic research. Most of the financing for such research is temporary and precarious. Large projects, long-range projects, and long-range commitments are ordinarily beyond the reach of these research agencies. At best these institutions are seldom the final judges of what research shall be undertaken, for when they solicit project financing, that decision passes to those with the power to give or to withhold support. The more we rely on project financing rather than program financing or general support, the less we are masters of our own research households. But it may be asked, are we competent to command the disposition of substantial funds for the greatest benefit of economics and of mankind?

Somehow within the system we urgently need to develop strategists with a greater sense of priorities with respect to opportunities and needs. While departments may regard research funds for the research interests of their existing staffs as their primary requirement, it is open to question whether this is the most effective way in which to advance economic research. Is not a commitment to research fully equal to teaching required? Should not the research effort be staffed with at least as much strategy as is now exercised in filling teaching positions? Must the projects be chosen to fit the teaching staff, or may not staff be chosen to perform the research required? Indeed, is not some formal organization for research a necessary adjunct of a thriving economics department? And, since talent is widely scattered, is there not an undeveloped role that independent research organizations such as the National Bureau and Brookings can play—the role of research strategy in co-operation with the universities, so that the scattered talent available may be brought into more effective use where it can make its greatest contribution? If at various points in the system a greater sense of research strategy for the deployment of resources were developed, it

would be of substantial value in advancing economic research with the means available. Such strategic views of research would be of great assistance to foundations, and they would give greater assurance to potential donors that an effective use would be made of their funds. Ultimately we must have more research establishments with capital and operating funds of their own to allocate.

The present system rations funds largely to those with interests that fit into the strategy of foundations and the interests of less informed donors. Meanwhile, urgent needs are arising in government and elsewhere for which funds are, or may become, available, and we are not well organized to deal with these needs strategically. If we are to avoid the curse of many scientific laboratories where it is complained that, "the unwilling are assigned by the unable to do the impossible," we must develop a competent general staff approach in economic research to help shape decisions that otherwise will be made for us. If scholars are to take command of research and steer its course, they must assume the responsibilities of command which include, among other things, the responsibility for strategy in the deployment of resources. Only thus, I believe, can they hope to attract substantial funds under their own control.

Brookings, through its expanded research program on public problems and its Center for Advanced Study, hopes, in its own limited way, to contribute toward closer co-operation with the universities and toward strategic planning that may be helpful to all. But I see equally important opportunities for major departments of economics, if they will consider the way to advance economic research as a whole rather than merely the way to provide research opportunities for their teaching staffs. Research strategy, I suggest, is destined to become a matter of major concern in economics because of the limited resources in relation to expanding needs, just as it has already become a major concern in the natural sciences because of the plethora of needs and funds in the face of limited time and talent. And I ask, are we in economics properly organized to make our appropriate, or maximum, research contributions —even if we had the funds?

THOMAS H. CARROLL: Discussion of this subject with several economists led to my decision to present a case study of the Ford Foundation's support of research activities in economics. This activity is relatively new; it is relatively quite large; and, on the basis of questions and comments I receive or hear about, it appears not to be fully understood.

In pursuing my self-assigned objective I shall not ignore the general questions which our chairman hoped the panel members would cover

as a group. To the contrary, I hope to point up some of them for further discussion by my panel colleagues and by the members of this audience.

The support of economic research is principally, but not exclusively, the responsibility of the Foundation's Program in Economic Development and Administration. Formally established in 1953, it is one of seven regular Foundation programs. In addition, a varying number of special or *ad hoc* programs are in operation at any one time.

At its initiation, four general objectives or goals of the program were enunciated jointly by the professional staff and an *ad hoc* committee of twelve distinguished advisors,[1] with the approval of the Foundation's trustees. They were and continue to be: (1) improving the organization, administration, and performance of economic units; (2) achieving growth, development, and economic opportunity without undue instability; (3) clarifying the appropriate role of government in economic life; and (4) improving economic relations among nations. It was agreed that progress in each of these problem areas could best be achieved by three lines of attack: research that might be expected to contribute to the solution of important problems in the four areas, more effective dissemination and practical utilization of professional knowledge, and development and more effective utilization of professional personnel.

The early activities of the program consisted largely of support of research on important economic problems. The Foundation was instrumental in the establishment of a number of new organizations or organizational arrangements for the conduct of what we have often referred to as "problem oriented research"; i.e., research consciously directed at either short-run or long-run contribution to the solution of fundamental and significant problems. (We realize, of course, that in a semantic debate one could well argue that all research in the last analysis, and in a very general sense, is problem oriented.)

Resources for the Future, Inc., which has its headquarters in Washington, is the largest of these created organizations. It has focused its research and educational activities on social science—principally economic—research relating to conservation, development, and wise use of natural resources. Its principal concerns have been changing land uses, energy demand and supply, water development and administration, regional economic growth, and the interaction of resources and national growth. This year the Foundation made an additional grant of $5,375,000 to extend support of RFF's operation through 1964. This action raised the total of funds allocated for RFF to more than 10

[1] Members of *ad hoc* committee were: George Leland Bach, Kenneth E. Boulding, Robert D. Calkins, John Maurice Clark, Robert Aaron Gordon, Walter E. Hoadley, John Lintner, Howard B. Myers, Lloyd G. Reynolds, Edward S. Shaw, Gordon Siefkin, and R. Miller Upton.

million dollars. Under the new grant a periodic appraisal will be made of this nation's resources position and RFF will double its potential for grant-making to other institutions.

A second economic organization established and supported with Foundation funds is the National Manpower Council. Sponsored by Columbia University, NMC is composed of a group of leaders in industry, labor, education, and public service from all sections of the country. Its purpose is to contribute to the improved development and use of the country's manpower resources. Many of you are familiar, I am sure, with the work of the Council, which has received widespread attention. As planned, it has not engaged in any basic research activities. A number of reports on scientific and professional manpower have been published, including, appropriately enough, a volume entitled *Womanpower*.

A third research program established and supported by the Foundation is the Center of International Studies at the Massachusetts Institute of Technology which is oriented toward the study of economic development. Inasmuch as the economic development of a nation is necessarily bound up with its political, social, and cultural environment, the techniques of the several social sciences are involved. Among the topics to which the Center has directed its research attention are the process of capital formation, social aspects of agricultural development, emergent alignment of political forces with special reference to their effect on economic development, and sources of political and social disaffection.

Fourth, the Foundation financed the establishment of an interuniversity group to study the labor factor in economic development. This program has been under the joint direction of four well-known labor economists: Dr. Clark Kerr, of the University of California, Professor Frederick H. Harbison, of Princeton, Professor John T. Dunlop, of Harvard, and Professor Charles A. Myers, of the Massachusetts Institute of Technology. Along with colleagues at several universities, this group has undertaken a comparative appraisal of the relationships between industrialization, managerial leadership, and the wage-earning groups in selected countries. Comparative studies have also been made of significant problems common to all countries. These include the recruitment and commitment of the labor force, managerial ideologies, the character and structure of labor organization, collective bargaining systems, and economic development and population growth.

A fifth research program which the Foundation was instrumental in initiating is the Consumer Expenditure Study at the University of Pennsylvania. In the course of revising the Consumer Price Index in 1951, the Bureau of Labor Statistics collected valuable basic data on

family expenditures, income, and changes in assets and liabilities. After the initial government purpose had been served, public funds could not be obtained to make the tabulations necessary for broader analyses of consumer behavior based on these data. The Foundation therefore grated $500,000 to the University of Pennsylvania in 1954 to be used for four principal purposes: (1) to tabulate and publish for general use the 1951 survey data, as well as selected statistics from earlier pertinent surveys of the Bureau of Labor Statistics; (2) to prepare a series of analytical studies of specific problems in the field of consumption, income, and savings; (3) to conduct seminars and conferences in consumption economics at the University of Pennsylvania; and (4) to provide teaching materials on consumer behavior for general use.

In co-operation with the Bureau of Labor Statistics, the three-year project was carried on by staff members of Pennsylvania's Wharton School and of other academic institutions, including Carnegie Tech, Yale, and Michigan. A series of volumes which contain tables and analytical reports has been published. These have been put to productive use by persons in business, government, and the academic world.

In addition to supporting these groups which were established with grants from it, the Foundation has assisted existing institutions which were devoted to problem or policy oriented research in the field of economics. In 1954, a grant of 1 million dollars was made to the Brookings Institution in support of its research program over a five-year period. This fall an additional 6.2 million dollars was appropriated for a series of so-called "matching grants" to support an expanded program in three directions: research relevant to public policy; a Center for Advanced Study to provide an opportunity for public officials to explore problem areas with scholars, for members of business managements to become better acquainted with public policy issues and governmental processes, and for a variety of related purposes; and assistance to graduate students and faculty members from universities around the country who might be selected to engage at Brookings in resident research on public policy matters.

The National Bureau of Economic Research received support for a few specific projects as well as general research support to cover a period of years. The total of these grants to date is 1.6 million dollars.

A number of grants to aid specific undertakings of significance have also been made to organizations concerned with economic research, training, and/or dissemination. For example, the following three projects of the Social Science Research Council have been supported: the work of the Committee on Economic Growth under the chairmanship of Professor Simon Kuznets, a project to revise the *Historical Statistics of the United States* in collaboration with the Bureau of the Census, and a

series of industry studies based on recent census data under the sponsorship of the SSRC's special Committee on Analysis of Economic Census Data. In addition to these grants in the economics field, the SSRC has received support for other activities of mutual interest to it and the Ford Foundation. The Survey Research Center's study of consumer attitudes under Dr. George Katona at the University of Michigan has been supported over a period of several years. Last year the Foundation made a grant to the American Economic Association for the preparation of a cumulative index of economics journals and the preparation of a register of American economists interested in furthering public economic understanding. The National Planning Association has received several grants, including one in support of Gerhard Colm's developmental efforts with economic projections. Another large-scale research project in economics which has received support is the Research Project on the Structure of the American Economy under the direction of Harvard's Professor Wassily Leontief.

Contrary to the impression which seems to have gained wide credence, the Ford Foundation has not restricted its activities to organized research efforts. As a matter of fact, we give as much consideration to small proposals as to big ones. Our grants to date have ranged from $640 to 6.2 million dollars. Of course, when a request for individual research can be fitted into one of the special programs designed for the purpose, which I shall describe in a moment, we prefer to handle it in that way. On the other hand, when a large-scale proposal is submitted for research which clearly calls for a more modest approach, we have no hesitation in suggesting that it be cut down to more appropriate proportions before it is given serious consideration.

Specifically, the professional staff of the Program in Economic Development and Administration has devoted much time and effort to financing, on a selective basis, promising efforts directed toward a significant problem of the individual researcher's own choosing. We have approached this objective in a number of ways. A program of so-called "rotating research professorships" was devised to free outstanding professors from teaching and administrative duties for the purpose of conducting full-time research for a year or two at a strategic point in their research careers. Five such research professorships in economics were endowed at Chicago, Columbia, Harvard, Yale, and California at Berkeley, the latter on a matching basis. Similar chairs were established in business administration at Carnegie Tech, Chicago, and Harvard. Each chair is held for a maximum of two out of ten years by either a visiting research professor or a faculty member of the home university.

On an experimental basis, special research funds were allocated at eighteen universities for problem oriented research in economics and/or

business administration by faculty members at the grantee institutions. These funds have varied in size from $15,000 to $250,000 and have covered a period of from three to five years. They are administered by local committees, including at least one faculty colleague from another academic area, and may be used in several ways; e.g., to finance research assistance and necessary research travel or to make it possible for faculty members to forego summer teaching so that such time may be spent in research.[3]

Another means of meeting the need for relatively small-scale support to qualified researchers has come to be known as the EDA Faculty Research Fellowship Program. Under these fellowships faculty members are released from teaching and other academic duties for varying periods up to a calendar year to enable them to carry on their research on significant economic and/or business problems. Fellowships are awarded on a national competitive basis to candidates who are nominated by invitation to their universities. An advisory committee of faculty members assists us in the selection process. The qualifications of the candidate and the merits of his research proposal are independently assessed. One hundred twenty-three faculty research fellowships have been awarded to date over a period of five academic years, including 1959-60. Half the candidates represent a veritable "who's who" in economics and business administration. The remainder are promising younger scholars and we like to think they represent a "who will be who" in these fields.

In recognition of the need to extend parallel opportunities to faculty members in economics (and business) at undergraduate liberal arts colleges, a grant was made to the Brookings Institution to enable that organization to administer a parallel national program. These awards are known as Brookings National Research Professorships. Eleven have been awarded to date, not including those in process of selection for 1959-60.

In the belief that involvement of smaller institutions in research activities would improve and invigorate their teaching, a system of regional summer research seminars in economics was devised. Fellowships are provided by the Foundation to enable selected college faculty members, most of whom are remote from adequate research facilities and seldom come in contact with professional colleagues with parallel interests, to spend a summer at a major university in their region. There the fellow formulates and carries forward an individual research proj-

[3] The institutions to which such research funds were granted are: Columbia, Duke, Harvard, Indiana, Johns Hopkins, Northwestern, Princeton, Stanford, Vanderbilt, and Yale Universities; Massachusetts Institute of Technology; and the Universities of California at Los Angeles, Michigan, Minnesota, North Carolina, Rochester, Washington, and Wisconsin.

ect under the guidance of a senior professor of established reputation in the particular field. Over the past two summers ten such seminars have been held, with a total of ninety-four participants.

The response to these seminars has been enthusiastic on the part of both the directors and the participants. Funds have been allotted to continue this program at least through the summer of 1961. For the summer of 1959, arrangements have been made for six additional seminars, dealing with such varied subject areas as public finance, international economics, government and business, and economic fluctuations, growth, and stability.

Since 1955, nearly 6 million dollars has been appropriated in support of the five programs exclusively designed to support individual research by faculty members which I have just described. Other grants, such as those which have provided general support of advanced graduate programs in economics and certain phases of our business education program, also include funds for individual research on economic problems.

An action taken this past year deserves special mention before this group of economists: the appropriation of $500,000 for the establishment of an independent National Commission on Money and Credit. The last full-scale investigation of the monetary system was that of the Aldrich Commission of 1908-11, which laid the groundwork for the Federal Reserve System. As you so well know, fundamental changes have taken place in monetry institutions and policies during the intervening half century. Chief among them are the breakdown of the gold standard, the enlarged responsibility of the federal government to promote economic stability and growth, and the growth of financial institutions outside the purview of the Federal Reserve System. The Commission will examine the nation's financial structure to assess its ability effectively to serve as a tool for balanced economic growth, sustained high employment and production, and prevention of undesirable inflationary effects. Alternative policies and approaches will be critically appraised.

Time clearly does not permit a full coverage of the activities of the Foundation's Program in Economic Development and Administration or of economic activities supported under its other programs such as Overseas Development, International Affairs, Aging and Education. All its economic activities serve the basic goals of the EDA Program, which are, in summary, to contribute to the strengthening of the national and international economy by promoting research, improving dissemination of professional knowledge, and developing professional personnel.

We have placed emphasis during the past two years on the third goal. In this respect the Program reflects the evolution of the Foundation as a whole, which has tried to respond to the critical needs of contempo-

rary higher education. It is the intention to continue a dedication to the identification and solution of important emerging problems in the interests of advancing human welfare.

PHILIP H. COOMBS: The purpose of this brief paper is to raise some questions about the usefulness and relevance of economic research to critical issues of public policy, and to ask how a seemingly unsatisfactory situation might be remedied.

There are no doubt some who would deny that economists and economic research have any obligation to help find solutions to important public problems. But a considerable number of economists, including some recent presidents of the American Economic Association, are deeply concerned by what appears to them to be the inadequate contribution of their profession to the formulation of sound and timely public policies and to the conduct of public affairs.

It must be conceded at the outset that there are notable exceptions to any general indictment along these lines. Yet those individual economists who during and since World War II have played influential roles in governmental posts or elsewhere in the shaping and execution of major public policies have often done so under some other guise and might as easily have been ex-manufacturers, bankers, advertising executives, lawyers, colonels, or English majors. We are speaking here about the profession as a whole and about the mainstream of economic research.

The plain fact seems to be that business and political leaders, the government, the public generally in the United States, and indeed economists themselves, do not look to this profession to anticipate and to develop effective solutions for major public problems of an economic character.

There are at least two general ways to test the validity of this proposition. One is to look at the major topics on which economists have been writing professional papers, dissertations, and books over the past twenty years and to ask what relevance they have to the great economic problems of our time. The other test is to name some of the major public problems which have become visible in the headlines and in the lives of millions of people since World War II and ask whether these problems were anticipated by economists and whether economic research was directed at them in time to provide a better informed basis for public policy decisions that had to be made.

I tried the first test on a recent rainy Sunday by playing a game for economists called "What Time Is It?" This game is played by taking the titles of all articles in the *American Economic Review* published during the three years prior to World War II, roughly twenty years

ago, and the titles of articles published in the most recent three years. The object of the game is to shuffle these titles thoroughly and unscramble them, if you can, according to whether they were written recently or twenty years ago. I was shocked to discover how timeless many of these articles are, and how often even the same author or his disciple could be found writing under substantially the same title over a twenty-year span. I could only conclude that the world of economic research has changed far less than the real world in which people actually live and die. And it is difficult indeed to discern in a good many of the articles even the remotest concern of the first world for the second.

Perhaps it will be said that this is an unfair test—that the *American Economic Review,* after all, is the gymnasium where economists pursue their professional games and perform their intellectual feats through articles, footnotes, and rejoinders, under a set of ground rules which are unusually confining and traditional.

And so in fairness we turn to the second test and ask what the record of economic research has been in anticipating, analyzing, and helping to resolve some of the great public problems which have erupted since World War II. I take as my sample a series of problems which, quite by accident, I have personally encountered in the course of earning a living. Most of these problems have become urgent enough to have received serious attention by presidential commissions, by Congress, by state and local governments, by political candidates and by the general press. Yet the record shows that they received relatively little if any attention from economic scholars until they had become full-blown public issues and until major public actions had already been taken (without benefit of careful economic analysis). Moreover, some of these problems are still regarded by many economists as being beyond the proper scope of respectable and worth-while professional investigation.

The problems to which I make reference include: housing, urban growth and redevelopment, natural resources, manpower (particularly high-talent manpower, including college teachers), the development of underdeveloped countries (which became a fashionable field for economic research only after President Truman's memorable Point Four speech), and, finally, the variety of pressing problems under the general rubric of "the economics of education."

By now at least a handful of brave and conscientious economists have turned their attention to doing pioneer work in these socially critical but undeveloped areas of economic research. But it can hardly be said that the center of gravity of economic research, taken as a whole, has

shifted to these or other important frontiers. It seems instead to linger upon the traditional and limited topics with which successive generations of academic economists and their students have concerned themselves in the past. To be sure, some of these traditional topics remain very important. But those upon whom the practical burdens of policy making fall may well ask whether the optimum use of scarce economists might not demand a reallocation of energies away from the refinement of old ideas and toward the development of brand new ideas to meet pressing new public problems.

My comments may be summed up by saying that there appears to be a serious cultural time lag between the emergence of major public economic problems and the emergence of economic research which can provide the basis for more intelligent public policies and programs to cope with these problems. Stated differently, a large proportion of economic research is carried out after major public policies are made rather than before; hence such research looks backward rather than forward, and the net effect is to reduce seriously the usefulness of economists to society.

Perhaps this appraisal is overdrawn, but if it has even a fair measure of validity, then it would seem important for the profession to take bold steps toward remedying the situation. A good starting point might be for a small group of wise and experienced men, including some economists but also some able scholars from other fields and some competent men of affairs, to subject the whole pattern of economic research to rigorous scrutiny in terms of its relevance and usefulness to public policy and its significance for human knowledge generally. Along with this might go an inquiry into how this pattern of research came to be what it is. What are the main forces that determine the quantity and quality of economic research and the distribution of emphasis among various topics? What factors cause this cultural time lag? How much of what is popularly called "economic research" really is research? To what extent does the manner in which this profession is organized—or disorganized—contribute to its effectiveness or ineffectiveness? Does the present system by which new economists are developed in the graduate schools, including the system by which dissertation topics are selected and then converted into careers, foster a kind of professional sterility?

If economics is indeed a profession representing a body of skills and knowledge based upon an intellectual discipline, then as a profession it should find ways to examine itself critically and to improve steadily its contribution to mankind. Its contributions in the past have undoubtedly been substantial, but society's demands upon this profession

are expanding rapidly. The time would seem to be ripe for the profession to examine its performance and its capabilities for meeting these demands.

SOLOMON FABRICANT: "You know," Maynard Keynes is said to have remarked once, "you know, we can promise to be good, but we cannot promise to be clever." This observation high lights a major aspect of research, which in turn implies a good deal about the principles and problems of organizing and financing economic research. At the risk of stressing the obvious, therefore, I want to recall a few characteristics of research that have general implications for some of the questions Seymour Harris has put before us.

First, as Keynes indicated, economic research is an uncertain business. Money buys, in any instance, not a product but only the hope of a product. There may be, it is true, bits and pieces of research that involve the straightforward gathering of information to answer a straightforward question. More often than any of us likes, however, the initial question turns out to be foolish in some way, and its answer the kind that foolish questions elicit. And apart from the questions, answers usually are not reached in anything like a straightforward manner.

The reasons are clear. In Richard Braithwaite's words, "Man invents a scientific system, and then discovers whether or not it accords with observed fact." (*Scientific Explanation*, page 368.) This is as true of research with an empirical emphasis as of research with a theoretical emphasis. But of all the ventures on which daring men embark, invention and discovery are the most uncertain. No one can promise to be clever—or lucky—enough to invent or discover anything significant.

Still less can anyone promise to be clever enough by a certain date. Some steps in research can often be speeded up by pouring in more resources per unit time, and it is sometimes highly desirable to do so. But this is possible or profitable only within limits. The groping of the researcher—that mysterious process he goes through of comprehending the diversity before him and somehow making sense of it—cannot be speeded up indefinitely. There appears to be some minimum period of gestation. And this period of gestation is only vaguely, if at all, known in advance. An experienced investigator may perhaps guess better than others how much time is required, but even his guess will often be wide of the mark.

Research is also like drawing from a grab-bag. In the course of an investigation, facts and ideas stumbled upon may shunt the investigator off, not to another road leading more directly to the original ob-

jective, but to a road that leads to a different objective. When the way is rough, however, it is easy to decide that the original problem is not really important or feasible. Frustration weakens resistance to diversion by purely technical or tangential or altogether different problems that can be solved. But if the investigator is sufficiently disciplined, this danger is less serious. Always to stick to plan is not necessarily the best practice, especially in basic research.

These several considerations argue, I thing, for flexible planning. I leave you to decide whether this suggests the desirability in many circumstances of grants for general programs rather than for the financing of specific projects and of long-term rather short-term support.

Its scale is another aspect of research to which Professor Harris points. As in many types of production, the average scale of research—both of the individual study and of the research enterprise—has increased over the years. Thirty years ago, Frederick Ogg's list of institutes for research in social science already included twenty research organizations in economics. These have undoubtedly grown in number and in size since, for we strive, at least as hard as before, to replace or supplement the qualitative judgments we had to be content with a few decades ago with quantitative estimates of relationship and importance. To this end, we make increasing use of bulky statistics and other empirical information. We employ more equipment and larger staffs. All this has expanded the scale of operations.

Of course, bigger scale has not been the only solution, and in many cases it is not the best. Some economists still need no more than a pencil and paper and would only feel burdened if given an assistant. For some others, the development of computing centers, for example, may meet their needs. I suspect, therefore, that the range of optimum sizes of "firms" is unusually wide in economic research. The increase in average scale of operations has not eliminated the lone scholar, though he is less important than in earlier days. Resources need to be spread over the full range of sizes.

The fact that economics is both basic science and applied science also is significant. Economics deals with the nature of the economy and with policies to improve its nature. Research on economic behavior has little point except insofar as it contributes, sooner or later, to effective policy. Interest in policy, then, is the great stimulus to economic research. But it also creates difficulties. It poses the danger of seeking and finding, in what should be the scientific work of analysis of economic behavior and policy, support for a particular policy. Economists lack the ritual and the robes that the law wisely provides to mark the transition from advocate to judge. As a result, also, there is some

difficulty in getting wide public acceptance of a piece of research, especially if it is presented in association with recommendations on policy. This, too, has implications for the organization and financing of research.

The ultimate objective of policy and the great interest of most economists in current questions of policy pose the further danger of devoting too much attention to matters of current and frequently ephemeral interest. Many of the problems of the day are important as well as urgent. But the problems of tomorrow also will be important and no less urgent. Some resources need to be reserved for the research that will prepare us to meet those problems more adequately than we can meet today's.

LLOYD G. REYNOLDS: My starting point is that there are several quite distinct types of economic research, with different organizational and financial requirements; and I want in particular to distinguish between the individual, the project, and the center.

Individual Research. If one defines research to include thinking, it seems obvious that a great deal of economic research must always be a personal venture. Theoretical speculation is of necessity an individual enterprise. Even on empirical issues, if they are carefully defined and focused, one energetic worker can go far with only limited assistance.

What this kind of work requires above all is free time. It is nice to have decent typing, a statistical man-of-all-work, and a little travel money. But mainly one needs time, and so the productive scholar in a university is always coming up against the problem: How can I get paid without teaching, or for teaching less than at present?

There are several possible answers to this question. It may seem utopian, but I believe it is basically sound, to suggest that the universities themselves should take primary responsibility for support of personal research activity. The foundations can do something, and the Ford Foundation has wisely done a good deal to support individual research in economics and business administration along the lines described in Mr. Carroll's paper. But it is not reasonable or feasible to shift the burden entirely to foundation shoulders. Too many universities at present say in effect to their faculty members: We expect you to do research and writing—in fact, you'd better do it if you expect to survive here. Of course we can't put up any university money to help you. But here's a hunting license on the foundations. We wish you luck.

This attitude is simply wrong, and some of the energy which university people put into criticizing the foundations might well go into

putting our own house in order. We need to build research into the regular university budget. We need to establish the principle that faculty members are appointed to teach and to perform research, and that some minimum level of research support is a legitimate budgetary responsibility. There should be more frequent research leaves for men who have demonstrated their productive capacity. The traditional sabbatical system is quite inadequate to meet this need. There should be funds available for summer research stipends to reduce the pressure to take on summer teaching or other extra work to balance the family budget. There should be a central research fund in the university from which modest grants-in-aid can be made for research and clerical assistance, travel, and other incidental expenses.

Some progress is being made in these respects, the leadership coming mainly from public rather than private universities; but not nearly enough is being done. If the universities would mobilize their resources more effectively on this front, university administrators and faculty members could take a more relaxed and dignified attitude toward the foundations and limit their requests mainly to substantial ventures of the project or center type.

The Project. Money for individual research is small money, one-year or two-year money. Let us consider next medium-sized, three-year to five-year money—in short, project research. The concept of a research project is fuzzy at present, and gets stretched to cover a wider spectrum of activities than it really should. At one extreme, many projects are essentially modest personal endeavors blown up into more expensive form because of a feeling that this is necessary to win foundation support. This is a great pity and a considerable source of friction in dealings between scholars and foundations. Contrary to widespread belief, it is not good tactics to inflate a $10,000 need into a $100,000 request. An experienced foundation officer will detect this in five minutes and will shrink the proposal back to proper size.

At the other extreme one finds requests which are really meant to support a continuing research organization with a long-range program. Trying to support such an organization through short-term grants leads to serious difficulties which will be described in a moment. The point to be made here is that, because foundations have traditionally supported projects on a three- to five-year basis, the concept of a project has been distorted to cover anything and everything and badly needs a narrower and sharper definition.

What, then, is an economic research project in the proper sense? It is a definite, separable piece of economic research, the dimensions and costs of which can be judged reasonably well, which has a clear

terminal date, and which leaves no continuing obligations behind it. It should not be the nose of a center or institute gently nuzzling its way into the foundation tent. To draw a clear boundary on the other side, it should be a task which is genuinely larger than can be accomplished by "a man and a boy." This may be because the dimensions of the study require collaboration of several people; or it may be because of expensive data collection or data processing requirements, which are growing in economics as the subject turns increasingly in a quantitative direction.

The research project, properly defined, is a natural channel of foundation support. From the foundation's standpoint, you can tell fairly clearly what you are buying, you know for how long you are committed, and you have assurance that you will be out from under in due course. The self-liquidating investment is as dear to foundation officers as to commercial bankers.

The Center. I mean by this the continuing research organization—the center, bureau, or institute—whether operating entirely independently or attached in some manner to a university. The justification for a permanent research organization is presumably that it is working on problems which are expected to be important for many years to come, that there is a body of data available which will not be exhausted in the foreseeable future, and that it is efficient to have a stable group of collaborators reinforcing each other's efforts over a long period. Effective management of such an enterprise requires systematic and long-range programming of research and long-range personnel commitments.

Permanent programs and permanent commitments logically imply permanent financing—endowment funds. Yet one frequently finds supposedly permanent research centers operating wholly or largely on the basis of short-terms grants. Responsibility for this situation is not all on one side. It lies partly with universities and other sponsoring agencies which fail to insist that a continuing program should be funded at the outset or should not be undertaken. It lies partly with foundations which, unwilling either to reject or underwrite a promising line of activity, adopt the compromise course of saying: Here's money to start you off for five years. Let's see what you can do.

Thus the new activity gets going under conditions which almost guarantee inferior performance. It is hard to recruit and hold top-flight people on such an impermanent basis. There is a rush to turn out results quickly, which interferes with efficient phasing of the research program. Everyone from the director of the center down is put under the "publish or perish" pressure of which our assistant professors

so often complain in the universities. Much effort goes into drafting and presenting the next foundation request. The foundation finds it difficult to reject a renewal request unless the venture has been a demonstrable failure. The original five-year support soon becomes ten-year support and may eventually, as in the case of the now defunct Yale Institute of Human Relations, turn out to be twenty-year support. The total cost before the foundation is out of the woods may be about as large as would have been required to endow the organization at the outset; but meanwhile the center has not had any of the peace of mind, opportunity for long-range planning, and other advantages which endowment would have provided.

Let it be clear that I am not suggesting an easy money policy on the part of the foundations. On the contrary, I would advocate a tougher foundation policy toward proposals to establish new research centers or institutes. Unless the foundation officers are convinced that the proposed research area is of major long-run importance, that the key personnel are outstandingly able, and that there is reasonable assurance of effective performance for a generation or more, they should reject the proposal. If they conclude that the organization does measure up on these counts, they should endow it and forget it. The organizations which succeeded in winning support would start off under much more favorable conditions. The foundation staff would be spared the continuing burden of renewal pressures, the pangs of gradually withdrawing support, and the eventual demise of organizations which can never be said to have lived except by artificial respiration—one grant at a time.

I have not said anything about the relative productivity of research effort expended in these three ways: by working on one's own, as a member of a small team on *ad hoc* projects, or as a continuing staff member of a research center. I suppose we all have hypotheses about this, but there is too little evidence to warrant firm conclusions on the matter. It may even be incorrect to phrase the problem in terms of relative productivity, which implies some homogeneity of output. The truth may be that these three types of activity produce rather distinct types of output, which are mainly complementary rather than competitive with each other.

It seems wisest, therefore, to encourage all three types of activity to compete for research talent on free and equal terms. It is important that the terms of the competition should be as nearly equal as possible, and this requires careful planning by universities, foundations, and other financing agencies. There should not be financial or other pressures to adopt one form of organization if another is more appropriate

for the purpose in hand. I have the impression that there is some imbalance at present—that project research is relatively oversupported, individual work is undersupported, and continuing research organizations are malsupported or ineptly supported. The task of rectifying such imbalance as may exist is one on which foundation people, university people, and others can work fruitfully together.

TJALLING C. KOOPMANS: Pages 208-220 of my essay, "The Interaction of Tools and Problems in Economics," the third of *Three Essays on the State of Economic Science* (McGraw-Hill, 1957), are regarded as the written version of my contribution.

ROUND TABLE CONFERENCE ON THE MARKET FOR ECONOMISTS: DEMAND AND SUPPLY ASPECTS

James Washington Bell, *Chairman*
Robert T. Woodworth, *Rapporteur*

The purpose of this meeting was: to bring together a group of specialists from the academic, business, and government sectors of the economy who are actively engaged in recruiting economists or training economists for professional careers or who are vitally interested in the labor market for economists; to afford an opportunity to exchange experiences and pool information useful in helping to solve immediate problems; and to consider the possibilities of improving the organization of the market for economists.

The difficulty which the International Cooperation Administration was experiencing in filling a number of critical hard-to-fill jobs in overseas economic missions provided the immediate stimulus for organizing this round table. The ICA jobs were of such a special character, calling for the services of formally trained economists and so attractive and so challenging, that one would have expected a waiting list of applicants instead of the need of an organized search for men. Inquiries made in this connection indicated widespread interest in the general problem of finding qualified economists for positions, not only in government service, but in business and in the academic area as well. Correspondence provoked a series of questions which prompted many to urge that a round table session be organized with an agenda which would provide an opportunity to discuss problems of common interest. The meeting was scheduled and about fifty economists were invited to attend.

Following is an outline of the agenda prepared for this meeting, accompanied by a list of twenty questions, an abstract or précis of the discussion, a roster of the participants, and a list of references. The discussion followed roughly the order of subject matter outlined and the abstract is a digest of a tape recording and transcription which was made of the proceedings. A full report, prepared by our *rapporteur*, was sent to those on the list and others requesting copies.

Agenda

I. *Statement of the Problem:* the demand-supply equation in the market for economists. What are the demand and supply factors? What is the product? Is there a single market or should the market be broken down into special markets?

II. *The Demand for Professionally-trained Economists.*
   A. Sectors.
      1. Teaching and research.
      2. Business (including industry and finance).

3. Government (domestic—federal, state, and local administration; and foreign service).

B. Characteristics of Demand.
   1. What do people think of "economists"? Social views and the changing environment (government economists, business economists, and academic "egg-heads"). Should "economists" be certified by an agency? Or licensed or in some way given professional status?
   2. Finding the right man for the right job at the right time: individual differences, circumstances, and situations vary.
      a) Job requirements (technical or special and general).
      b) The man, married (with or without family) or single. Economic return, social prestige, political status, and other incentives.
      c) Temporary employment; e.g., one-year, two-year leaves of absence versus careers. University administration views on "leaves of absence."

III. *The Supply of Economists: Principal Sources.*
   A. Major graduate schools (with general and special curricula).
   B. Professional schools of business administration and of public administration (including training for the foreign service).
   C. Employed economists, but not in most productive posts. (What is the labor turnover?)
   D. Retired but qualified personnel.

IV. *Channels of Communication between Demand and Supply Factors.* (Significant changes may have occurred in establishing lines of communication during the prewar, wartime, and postwar periods.)
   A. Academic.
      1. Haphazard lines of communication between deans and chairmen, etc.; recruitment from alma mater and similar sources.
      2. University personnel or placement bureaus.
      3. Publishers' agents as sources of information.
   B. Business.
      1. Recruiting trips to colleges and universities by company personnel officers.
      2. Industrial fellowship and scholarship programs; training programs.
      3. Direct advertising in trade, business, and financial journals and in daily papers.
      4. Professional recruiters; part-time consultants.
   C. Government Departments and Agencies.
      1. U.S. Civil Service recruiting experience.
      2. Personnel work in the Departments of State, Labor, Commerce, etc.
      3. Direct recruitment by special agencies; e.g., USES, ICA, CIA, Bureau of the Budget.
      4. Present status of the National Roster of Scientific and Specialized Personnel and the National Registration of the Humanities and the Social Sciences.
   D. Professional Associations, Activities and Responsibilities of:
      1. AEA "Vacancies and Applications" section in the *AER* and employment register at annual meetings. (N.B. USES co-operation with AEA and Allied Social Science Associations.)
      2. Employment activities of other social science associations.
      3. AAUP *Bulletin* announcement section; AAUP-AAC Retired Professors' Register, and the American Association on Emeriti *Employment Registry.*

V. *What Can Be Done to Improve the Market Organization for Economists by Public and Private Agencies?*

VI. *How Close the "Gap," If One Still Exists after All Lines of Communication Have Been Established?*
   A. Make good the shortage by stepping up production.
   B. Patterning the demand to fit the available supply.

Twenty Questions

1. What are the facts with respect to the demand for economists? Do you have difficulty in finding qualified economists for positions (in academic work, business, or government service)?
2. Is this a short-run problem? A long-run problem?

3. Can you give examples of hard-to-fill positions in your own field of interest? Would you consider these exceptional or representative of general conditions?
4. Are your experiences of personnel recruitment of economists (as dean or chairman, business or government personnel officer) any different now than they were in prewar, war, or immediate postwar periods?
5. What statistics, if any, can you present to show that there has become an increasing demand for economists?
6. Has the supply of economists increased proportionately to increased demands?
7. What are the statistics on the supply of economists, e.g., B.A. majors, M.A.'s, and Ph.D.'s, over the past three or four decades? Do you have statistics showing numbers of graduate students in economics and business and in special curricula for training economists (and social scientists) for public administration or government foreign service?
8. Who gets the best men? How or why? What are the facts with respect to salary, fringe benefits, security, promotion, prestige, etc.? These are matters of "employment outlook" for "career opportunities" involving both short- and long-run aspects.
9. Is it true that thousands of fellowship and scholarship awards "go begging" for lack of qualified takers?
10. Are we missing potential sources of supply by retiring economists at 65 or 70, etc.?
11. Would the hard-to-fill jobs attract a waiting list of applicants if their availability were more widely known?
12. Would more students select economics as a career if openings and opportunities were more widely known?
13. What are the present lines of communication between demand and supply in: (*a*) teaching and research, (*b*) business, (*c*) government service?
14. What agencies or "middlemen" exist in these areas?
15. How standardized is the service that an economist renders? How far should we go in providing specialized institutions to prepare a product for special services?
16. What are the responsibilities of university personnel or placement bureaus in finding appropriate positions for their graduates?
17. What are the responsibilities of professional associations in performing placement services?
18. What can government agencies do in improving the market for economist manpower (in wartime and in peacetime)?
19. If a full knowledge of supply-demand factors exists and we still find a "gap," how then shall we solve the problem? Can we make good the shortage by stepping up production? Or will we have a pattern demand to the available supply?
20. Finally, how can the production of economists be increased, or how and in what way should the demand be curtailed?

Abstract of the Discussion

James Washington Bell apologized for assuming the chairmanship and explained that he had made futile efforts to get a labor economist to assume the work of organization of the session. He indicated, however, that, as a department head, director, and as a dean of a graduate school, he had long been interested both in the training of economists and in helping them find appropriate places in their profession after they had completed their preparation. He expressed his belief that many of the manpower shortage problems could be solved by improving the lines of communication between the demand for economists and the sources of supply; but first he raised the question of the demand-supply equation and asked for facts about a "shortage" of economists.

The General Market. *Ewan Clague* started the discussion by presenting statistics on the over-all population of economists and estimates for the next decade. These statistics, taken from the forthcoming edition of the *Occupational Handbook* of the Bureau of Labor Statistics, showed

17,000 economists employed in the various areas of the economy. Of these 17,000, he estimated that 7,200 were in college teaching, 5,500 in the federal government, 800 in other governmental agencies, 2,100 in private industry, and 1,050 in other areas such as the Federal Reserve and nonprofit agencies. He also presented estimates on the outlook for economists in teaching, business, and government for replacement and expansion. According to his estimates, there will be an increase in the number of economists to about 26,000 by 1967—about enough to take care of replacement needs and the growth in demand. This projection contrasts with the views of those who predict an over-all shortage of economists over the next decade.

Attention was called to the Bowen report, *Graduate Education in Economics*, which contains a great deal of information on the employment and functions of economists, their number, salaries, the demand for economists, degree standards, quality of graduate students in economics, and many other topics pertinent to this discussion.

Mary Electa Robinson stated that one of the conclusions of the conferences on the proposed Central Placement Service held with representatives of the social science associations, business, and government was that there was very little knowledge about the social science population.

There were several participants in the round table who responded in passing on the general state of the market for economists with such comments as "imperfect" or "chaotic." Among the more pointed remarks was that of *Louis Levine*, who said that the market for economists was as bad as that for domestic servants or migratory workers.

The Demand for Economists. Allen Wallis commented that from his point of view, the shortage of qualified economists at all levels was primarily one of price. Along this line, *D. E. Wassen* complained that small colleges cannot compete with the prices the big universities have to offer.

Jack Robertson called attention to empirical data in an article by John D. Garwood in the South-Western Publishing Company magazine on economics in schools of business, suggesting that business schools cannot replace their own faculties, so must turn to economics (which he feels would have a good effect).

F. M. Boddy reported results of a three-year survey of thirty leading schools of economics in this country (schools defined in terms of departments producing the largest numbers of Ph.D.'s in economics). We have statistics for Ph.D.'s but little reliable information with respect to student population and graduate students. Their numbers seem to be increasing, although a brief period of two years cannot give a very reliable indication. Statistics on salaries show an erratic behavior, though

levels of salaries seem to be going up slightly. Also, new appointments seem surprisingly low—about one and one-half per institution this past year.

H. K. Allen advocated more courageous salary scales and he pointed out the difficulties of obtaining first-rate people for the next September when the budget is not set until April.

Turning to the business field, *Dexter M. Keezer* complained of the shortage of qualified economists to take well-paid jobs in business. He also stressed the need for lucid writing and felt that universities were not furnishing motivation to enter this field. *Martin Gainsbrugh* noted that the problem of recruiting economists in business is not only real but acute. *Henry Arthur* commented that business generally hires only upper level economists, as most jobs are lone-wolf propositions, and that the economist has to adapt his writing to the business idiom.

Emerson P. Schmidt continued the discussion of business demand for economists by emphasizing the need for judgment, evaluation, and interpretation along with technical skills. He referred to a pamphlet on the need in business for economists and called attention to the enormous potential market for economists in business, including 150 investment trusts, 1,200 life insurance companies, many pension funds, 14,000 banks, trade associations, chambers of commerce, and publishers. He also pointed out that while some concerns go for economists in a big way, others neglect possibilities. [Clark S. Teitsworth in a recent study at Socony found that of ninety-four large companies employing economists, twenty-five employed only one economist, fifty-two employed less than three, and only nine had staffs of ten or more economists.] Businessmen want decisions based on "sound economics." Economists should be prepared to choose between alternatives; should know enough about trends to make decisions valid for the future; and should help plan to meet changes and to help business understand its own problems—problems of the firm and of the economy.

W. E. Hoadley, Jr., commented that most businesses need fully trained economists but that there seemed to be a gradual trend toward increases in junior positions. He also commented that the economist in business often spends half of his time selling his service to management.

Talking about the government's demand, *Jack Vaughn* described the need of the ICA for hiring economists in considerable number to staff overseas economic missions. Because of the alphabet switches in the history of this organization, people unfortunately think of the ICA as a jerry-built, short-term agency instead of the ICA as one of the principal tools of U.S. foreign policy. There are career opportunities in this service for both general economists and specialists of varying levels

and ages. The ICA needs about seventy to ninety additional economists for the coming year and an estimated forty to fifty per year for the next three to five years—an approximate figure because many economists are advanced to administrative jobs. There are opportunities for both senior and junior men; viz., mature specialists in taxation, finance, area development, etc., and for young interns and support specialists who can develop into trained career men (program officers in overseas missions). The main problem in the past has been that a one-year leave has been too short in that it takes that period of time (for cultural, language, and other types of adaptation) to become effective. Mr. Vaughn considers opportunities in terms of kinds of jobs, advancement, possibility of making a contribution, and increase in professional competence in the ICA unequaled anywhere else in government service.

Ewan Clague pointed out that there is a growing field for economists in industrial management relations, not only in the USDL, but also in business and in labor unions.

Leonard Sherry added that regional needs do not present a serious recruiting problem; e.g., probably six a year for the Seventh U.S. Civil Service Region (Illinois, Michigan, and Wisconsin), the BLS taking most of these, since about 75 per cent of government economists are in Washington. The Agricultural Market Service takes three or four a year. The only kind of hard-to-fill job is for a female economist to travel 60 per cent of the time.

The possibility of a slowly developing market for economists in municipalities was brought out by *Kirk Petshek*, who characterized himself as a "rare bird"—an economist for the city of Philadelphia. Urban and metropolitan research call for an interdisciplinary approach. Consultants are increasingly employed in this area.

According to *Louis Levine*, university people should become aware that economists are needed on the state level. He was talking about labor economists only. University administrators think of economics students almost exclusively as potential seed corn for teaching and have little awareness of other fields of employment, particularly government. They know a little bit more about federal government, but it is appalling to find in university after university, in state after state, how unaware they are about what is going on in their own state government. This frequently applies to land-grant colleges—an amazing situation!

Mr. Levine deplored the tendency to make labor economics synonymous with industrial labor-management relations. The field that is really developing is for labor economists who know the structure and behavior of the labor market, problems of labor supply and demand, occupations, and the whole field of manpower resources. This is true, not only in this country, but for underdeveloped countries in Asia and

South America. The USES is recruiting for ICA and for ILO in those areas and find tremendous shortages everywhere, and they experience very great difficulties in finding qualified people. Over the U.S., states are employing four hundred to five hundred labor economists—20 to 25 per cent of the labor economists in the country—and these are in the manpower field. They are located not only in the central administrative office, usually found in the state capital, but also in local state areas. The glamor of arbitration and conciliation under the Taft-Hartley Act has caused people in the universities to lose sight of labor market problems.

Mr. Levine expressed his agreement with Ewan Clague's views on the qualifications of economists. He stated that a combination of statistics and economics is needed, but that ability to translate data into meaningful planning, programming, public policy, and action is more important than high technical or theoretical skill.

Up to this point in the discussion, there seemed to be general agreement about opportunities open to trained economists; that is, that there is a continuing unfilled demand for qualified people. Rapidly mounting enrollments in universities and colleges call for ever larger numbers of teachers of economics. Every major branch of business is becoming aware of the greater need of economics in the business world. Federal, state, and local governments are increasingly finding new needs for economists. Research agencies of many types, both government and private, are seeking trained economists. Today, as never before, there is a "sellers market"—one which is likely to grow. But the questions of quality and price still remained unsettled.

Ancel N. Taylor said the Department of State had been interested primarily in political scientists in the past but now were also visiting business schools and economics departments in a search for people and had recently changed their examination so that 20 per cent of it was mainly economics.

The Supply of Economists. The market for economists has little meaning, according to *T. W. Schultz,* because the product cannot be readily defined. We need to specify what we are talking about. He cited an example of requests from seventeen small but good colleges (of which only two could be filled because it is not possible to pick up a man in the present market with three years of graduate study at salaries of $4,500 to $5,000), nine requests from government agencies who wanted "public relations" men rather than economists, and a dozen enquiries from business, with only a third knowing how economists could serve them. We cannot talk about such heterogeneous demands in any sort of schedule sense. We need to specify that one, two, and three years of graduate training have separate and distinct meanings.

[In this connection, the report of an AEA Committee on Economists in the Public Service (*M. A. Copeland,* Chairman, 1944) might be of interest to those who agree that there should be some standardization of the product. Professor Copeland has recently repeated his recommendation that economists who have achieved a minimum level of professional competence (say about the Ph.D. level) be certified by the American Economic Association. He believes that this could make a very important contribution to improvement in the organization of the market for economists.]

Mr. Schultz also mentioned the large drain of foreign students on the resources of graduate departments of economics in the leading schools. He said that foreign graduate students make up 33, 40, or 50 per cent of the total students in many departments.

According to *Allen Wallis,* employers should understand what is reasonable to expect from economists and why they, like any expert, hesitate to give yes or no answers to questions which seem simple to laymen. Business schools should turn out prospective businessmen who can understand the language of economists in order to use even the high-powered ones most effectively. He also said that there seemed to be a definite increase in the Ph.D. programs in the leading business schools.

H. K. Allen stressed the need for setting up state commissions on higher education to study the over-all problems involved in higher education. Along with this he advocated a working all-university committee at the major schools. He also suggested that one way to ease the supply problem was to shift part of the load of the first two years of undergraduate study to the junior colleges and have the major universities have the bulk of their enrollment in the advanced undergraduate and graduate programs, as is being proposed at the University of Illinois.

Roy Blough put forward the idea that personal motivation towards the area combined with a problem oriented approach is necessary for business and government economists. Training for business and government should be similarly oriented. He indicated that this training could be better done in a school of business than in a department of economics but that preparation for business or government can be done in either place if done properly. He expressed his belief that business school students should pass the same qualifications as Ph.D.'s in economics.

W. T. Phillips endorsed Roy Blough's statement. He described the program of study at Johns Hopkins University School of Advanced International Studies, which combines a core of economic subjects with political science, diplomatic history, international law plus area specialization (cultural development, etc.), with emphasis upon current events. This is not what the traditional kind of economist gets as a rule, but is what business and government need and apparently want.

Mr. Clague commented that he thought universities should concentrate on fundamental training and not attempt to train for all specialties. *W. E. Hoadley, Jr.*, said that retired businessmen could furnish an increasing source of college teachers. Along this line, *Louis D. Corson* said that a program of this nature was being considered by several large companies.

Channels of Communication between Demand and Supply Factors. The real trouble is not a shortage but a lack of proper communications and distributive channels. This view was expressed by numerous participants. Those looking for men to fill particular vacancies or new openings do not know where to go to find them. This generalization holds in all areas—academic, business, and government. *Emerson Schmidt* considered it scandalous that neither the professional associations nor any other organization has established a real placement market where businessmen and others can come to get the help they need. Some universities have developed personnel departments or placement bureaus and some company personnel officers make systematic recruiting trips to hire college and university graduates. During the war, the government made heroic efforts to establish national registries of specialized and scientific personnel and special agencies; e.g., USES, ICA, CIA, and the Department of State. In the new ICA program, experienced personnel men are sent right into the field to interview candidates and their wives. There was general agreement among the round table participants, however, that efforts now being made are inadequate. Most of the discussion centered on academic recruitment.

Several participants referred to the placement activities of the professional associations in the social science field. *Mary E. Robinson* presented two exhibits summarizing (1) occupational data and personnel activities of a dozen of these associations, showing membership, estimated number in the profession, per cent nonacademic employment, personnel service performed, and budget of income and expenditures and (2) professional and clerical staff time devoted to personnel activities, publication of directory, journal notices or job bulletin, employment exchange, and evaluation of personnel services.

The employment activities of the AEA consist only of the publication of an announcement section in the *AER* and provision for registration and interview—the so-called "Slave Post"—at the annual meetings. A review of the AEA "Vacancies and Applications" announcements was presented by *A. L. Gitlow*. He noted that the number of vacancies announced has been increasing. He suggested possibilities of improving the placement service on the part of the Association and raised the question of emeriti professors being included in the announcements.

For the past few years, co-operation of the USES has enabled the

social science associations to conduct an employment registry or placement service on a vastly larger scale than we would be able to do with our own limited resources. This has proven to be very costly but both Levine and Sherry agreed that it must go on. Mr. Levine, in commenting on the Slave Post, cited preliminary figures: 353 (465) people applied for jobs; 262 (279) employers listed 343 (476) openings. The latter was broken down as follows: 124 colleges with 171 job openings; 48 industrial firms with 91 job openings; and 32 government agencies with 81 job openings. [Final figures in parentheses are taken from the report of Adolph O. Berger, Chairman of the Subcommittee on the Employment Register.]

The question was raised, what happened to the American "brain barrel"? *J. Fletcher Wellemeyer* informed us that neither the National Scientific Register nor the National Registration, the Humanities and the Social Sciences, was established to be used directly for placement purposes. They were primarily surveys. Some experimental use was made of the IBM classification to see if it was possible to search out by clerical methods individual biographies and schedules of persons meeting requirements for specified positions to review for selection. The suggestion was made that the USES take over the operation of the National Registration. The National Science Foundation is operating the National Science Register, but here again not directly for placement purposes.

Louis D. Corson described the recent formation of the AAUP-AAC retired professors register. This is a newly established agency, made possible by foundation grants, and not many registrants have so far enrolled.

A parallel register—the Emeriti Census of the American Association on Emeriti, Constantine Panunzio, Director—was mentioned but not described. This has been in business longer and has a substantial roster of names.

The problem of recruiting personnel for research agencies presents a peculiar problem. *A. D. H. Kaplan* indicated that at Brookings Institution a resident staff of a dozen people might need researchers by the hundreds and collaborators on numerous studies who have talents in certain areas and who can be released by their institutions on sabbatical or on special release to enable them to do significant research work. The problem of finding the right person for the job at hand at the right time is a difficult one. At the present time, the search is limited to friends and their contacts. If the availability of special talent for studies were made known, it would be helpful. A roster of those going on sabbatical leaves would be a good beginning.

Benjamin Higgins called attention to the known fact that people

object to having their names appear on rosters; at least the older people regard this as a "misbehavior." Those above the rank of assistant professor just do not apply for a job. They wait for people to come to them. *Allen Wallis* took exception to this view and expressed his impression that even senior members of the profession are not at all chary about letting it be known that they would like another job.

Advertising as a medium does not answer the problem of recruiting for teachers and researchers. *Gerald Somers* pointed out that big universities do not advertise because they do not want to be flooded with applications from incompetent people and also because of prestige. Only the smaller colleges can afford to advertise, and this reaches primarily the market for new Ph.D.'s and young instructors looking for their first outside jobs. *Seymour Harris* told of a case at Harvard where advertising a position was approved by the administration but turned down by the Economics Department. On this issue, he alluded to *The Academic Market Place*, by Caplow and McGee, which goes into this problem very thoroughly and explores the devious ways used to avoid direct channels. Professor Somers described a pilot study which he made of the mobility of economists. Data were taken from the 1948 and 1956 AEA *Directories*. *Professor Gitlow* remarked that a higher salary may cause a man to move but it also has a delayed impact on the internal structure of salaries. A new man coming in at a higher salary disturbs internal relationships. It is probably true that efforts are made to withhold or keep secret remuneration information on this account. Dean Wallis was critical of Somers' figures, which showed surprisingly low mobility.

Henry Arthur, commenting on channels of communication, said that he found out from his friends those enemies from which he should pirate people. *A. L. Gitlow* cited consultants to business as sources of employment information.

In commenting on the inadequacy of the channels of communication, *Mary Electa Robinson* said that William Butler told her that he had been out for from four to five weeks trying to get economists for the Chase Manhattan Bank. He said they had no price limitation. If he saw what he wanted, he could pay for it. He spent a long, long time and he came back with two of the ten that he wanted and he said the next day in came from the street an applicant that was better than anything he had seen. The applicant had been in New York for six weeks looking for a job and was dead broke and the first thing he had to have was a loan to finance his move into the city.

Ways to Improve the Market Organization. While numerous suggestions were made to improve the functioning of the market for economists in all three sectors, chief interest centered on a proposed central

placement service for the social sciences, described by *Mary Electa Robinson*. This project was started two years ago on a grant from the Stern Family Fund. The lack of adequate channels of communication between those looking for men and those seeking jobs pointed clearly to the need of a roster of names (the use of the National Registration, the Humanities and the Social Sciences, 1952, was considered) and a clearing house or placement agency through which to route inquiries was clearly indicated. The first steps taken were to get together executive secretaries of the social science societies to see what they were doing and to learn what they knew about the market, especially the nonacademic market, for social scientists. Further study led to a proposal that an interdisciplinary roster be compiled (it would be cheaper to make a new one than to up-date the old roster), that this roster be used for placement (the whole population of the social sciences), and that a five-year grubstake grant be sought from the foundations. She said that several of the foundations were showing renewed interest and cited several of the conclusions growing out of the conferences on the central placement service: (1) There was very little knowledge of any kind about the social science population; (2) job hunters were not wanted in the market and academic institutions would rather not put jobs on the market and would rather hire somebody already employed; (3) the only way a professional placement service could really work would be to have a complete roster of all the social science population; (4) most operational jobs were interdisciplinary in nature; and (5) the market is national in character and social scientists do not seem to mind moving.

How to Close the Gap. Assuming that satisfactory agencies have been established and that satisfactory lines of communication can adequately bring demand and supply factors together in the market for economists, the question still remains, what to do if a gap still exists? What can be done if we find that we do have a shortage of trained economists? The obvious answer is either make good the shortage by stepping up production or, if this cannot be done, pattern the demand to fit the available supply. The first solution raises the question of opportunity cost: Do we need them badly enought to justify the outlay? This is a long-run as well as a short-run problem and the implications are quite significant. For example, in government service, if foreign economic missions cannot be adequately staffed, it might be better to close them than to bungle the job—better to curb our claims to world leadership than to waste our substance and to make enemies. There is merit to the claim that we should not undertake responsible assignments unless we have qualified personnel to do them well. This principle applies with particular force in foreign relations, but it is also true in business and in teaching and research.

Some work has been done on the problem of increasing the supply of trained economists. Time did not permit developing this theme.

Seymour Harris presented several ideas on how to conserve manpower, thus making more effective the existing supply. First, he mentioned the great attrition: the failure to identify talent which causes the loss of many who never go to college and never get the education commensurate with their ability. He said this identification should take place in about the ninth or tenth year of school. Second, he mentioned the financial problem, with special emphasis on salaries, and estimated that six billion dollars would have to be raised in the next ten years to solve the higher education problem. Third, he said that faculty loads were too heavy and that teachers should be given greater secretarial and research assistance. Such help would make their ability more effective. Fourth, one solution to an expected teacher shortage is to increase the number of M.A.'s rather than Ph.D.'s and the M.A.'s can do a good deal of the teaching job, especially in the junior colleges. He pointed out that at the present time 40 per cent of the college teachers are Ph.D.'s, but in the last three years, of the new teachers only 31, 27, and 24 per cent were Ph.D.'s A fifth point is that we spurn the most modern techniques for teaching that control experiments have shown to be effective. These include dispensing with the medium-sized class and concentrating on lectures, often with television and a large number of small groups, that is, from one to ten, and greater use of independent study. In this regard, Professor Harris commented on the proposed Oberlin College program, which called for more independent study and year-round teaching. A final point that he made was that women economists are available at about a thousand dollars less than similarly qualified male economists.

It was not the purpose of this meeting to draw conclusions and make recommendations. It was designed, rather, to benefit those attending by clarifying the problem, exchanging experiences, and establishing contacts and suggesting where to go to find out more information. To aid in this last objective, there is appended a roster of participants and a list of references.

LIST OF PARTICIPANTS

Not all of those listed were able to be present at the round table session. No record was taken of attendance. Some sent in communications which were utilized in drafting the abstract.—Editor.

Allen, H. K., U. of Illinois
Arthur, Henry, Swift & Co., Chicago
Avirett, W. G., Carnegie Endow.
Bauder, R. S., U. of Missouri
Blough, Roy, Columbia U.
Boddy, F. M., U. of Minnesota
Bowen, H. R., Grinnell Col.
Cain, Robert W., Nat. Sci. Found.
Chamberlain, N. W., Columbia U.
Christey, L. S., ICA
Clague, Ewan, BLS
Cleveland, H. J., Maxwell Sch.
Copeland, M. A., Cornell U.
Corson, L. D., AAUP-AAC Regis.
Daugherty, C. R., Northwestern
Ellis, Ira T., Du Pont
Ferber, Robert, U. of Illinois
Ferguson, Robert, Cornell U.
Gainsbrugh, M. R., NICB
Ginzberg, Eli, Columbia U.
Gitlow, A. L., New York U.
Green, P. M., U. of Illinois
Greenslade, Rush, CIA
Haber, W., U. of Michigan
Hale, E. E., U. of Texas
Harberger, A. C., U. of Chicago
Harbison, F. H., Princeton U.
Harris, S. E., Harvard U.
Higgins, Benjamin, M.I.T.
Hoadley, W. E., Jr., Armstrong Cork
Huber, J. R., U. of Washington
Kaplan, A. D. H., Brookings Inst.
Keezer, D. M., McGraw-Hill
Kozelka, R. L., U. of Minnesota
Levine, Louis, Bur. of Emp. Sec., USES
Lewis, J. P., Indiana U.
Miller, T. A., Indiana U.
Millikan, Max, M.I.T.
Petshek, Kirk R., Philadelphia
Phillips, W. T., Johns Hopkins U.
Reynolds, L. G., Yale U.
Riecken, H. W., Jr., NSF
Robertson, J. E., U. of Wichita
Robinson, Mary E., Brookings Inst.
Schmidt, E. P., U.S. Ch. of Com.
Schultz, T. W., U. of Chicago
Sherry, L. J., U.S. Civil Serv.
Somers, G. G., U. of Wisconsin
Stewart, R. B., Fletcher Sch.
Stigler, G. J., U. of Chicago
Stocking, G. W., Vanderbilt U.
Taylor, Ancel N., Dept. of State
Thorp, Willard, Amherst
Vaughn, Jack, ICA
Wallis, W. Allen, U. of Chicago
Webbink, Paul, SSRC
Weidler, W. C., Ohio State U.
Wolfle, Dael, AAAS
Young, D. M., Western Reserve U.
Young, Edwin, U. of Wisconsin
Wassen, D. E., Pfeiffer Col.
Witte, E. E., U. of Wisconsin

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AMERICAN ECONOMIC ASSOCIATION

PROCEEDINGS

OF THE

SEVENTY-FIRST

ANNUAL

MEETING

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CHICAGO, ILLINOIS

DECEMBER 27-29, 1958

PROCEEDINGS OF THE AMERICAN ECONOMIC ASSOCIATION

ANNUAL BUSINESS MEETING, DECEMBER 29, 1958
PALMER HOUSE, CHICAGO, ILLINOIS

The Seventy-first Annual Business Meeting of the Association was called to order in the Red Lacquer Room of the Palmer House at 5:00 p.m. by President G. W. Stocking. After presenting a brief outline of the order of business, he called for the ratification of the actions taken by the officers and committees of the Association. This took the form of approving the minutes of the last business meeting (December 30, 1957) and the minutes of the Executive Committee meetings and the reports of officers and committees—all of which are published in the *Papers and Proceedings*. It was VOTED to ratify actions and approve reports as published.

A summary of the reports of the Secretary, Treasurer, Finance Committee, and Auditor was presented by J. W. Bell and copies of financial statements, investment holdings, and the Auditor's Report were made available for inspection. The Secretary commented on the increasing size and volume of the operations of his office and of the difficulties in getting and holding efficient office force. As new committee projects are undertaken, the functions of the Secretary's Office are extended and these cannot be considered costless.

Notwithstanding the increased magnitude of our operations, the Association has ended the year with a net surplus of $5,600—and this in the face of a projected deficit of $6,000 or $7,000. We hasten to add that this result is not too reassuring, since without a $9,800 profit on sales of securities we would have sustained an operating deficit of some $4,200. The situation this year is not unique. Capital gains (of some $70,000) have turned operating losses into net income or have substantially added to net income in seven of the past ten years. Without the fairly effective hedge we have in our investments in common stocks, increasing production costs would long since have forced us to increase our membership dues and subscription rates, which have remained unchanged since 1949. Barring further inflation, we can go on for another few years without an increase in dues, as the Report of the Committee on Association Deficit suggests; but to rely upon investment gains is a questionable practice, and a suggestion is made in the Treasurer's Report which members might ponder.

The Treasurer reported the sad loss of a valued member of the Finance Committee, R. C. Osgood, who died in July, 1958. He had served as Chairman of this Committee since 1938. The vacancy caused by Mr. Osgood's death has been filled by Professor C. D. Anderson, who had been provisionally appointed a fourth member of the Committee and has since been approved as a regular member. With C. W. Farnham as Chairman and an experienced investment analyst as a new member, we have every reason to expect that we will continue to benefit by expert investment advice.

The Auditor's Report represents a painstaking and thorough review of our

books, which, because of their growing coverage, call for more and more service on the part of our auditors, David Himmelblau & Company.

The above reports were accepted, with a vote of thanks to the members of the Finance Committee and to the Auditor.

The report of the Managing Editor of the *American Economic Review* was presented by B. F. Haley, who summarized the operations of the Editorial Office and of the Editorial Board. The Editor's Report contains data on the number of articles and communications received, classifies the content of the *Review* by subject matter and by number of main articles, communications, reviews, etc., and presents a budget for 1959. It was approved by action of the Executive Committee. Professor Haley also commented on the survey articles which were authorized last year.

The reports of two committees were summarized, reference to the work of other committees having been made in the Secretary's Report. These and the reports of the council representatives are all published as part of the *Papers and Proceedings*.

Speaking for the Committee on Association Deficit, S. E. Leland reviewed the work of that Committee from its establishment to the series of recommendations contained in its final report. Dean Leland pointed out that when the appointment of the Committee was authorized, the financial outlook for the Association seemed to be a series of continuing deficits and that the Committee was charged with the consideration of ways and means of meeting these deficits; that investigations showed that costs were catching up with income; but that our financial backlog was adequate to keep us going for quite some time without increasing dues and subscription rates (if the Executive Committee approved the use of the Association's surplus for this purpose). New ways of raising additional revenue were proposed, such as enlarging the advertising section of the *Review* and soliciting advertising for the *Papers and Proceedings*, more liberal use of our mailing list at commercial rates, and the use of available current mailing lists to enlarge our membership. The current net income, instead of an expected deficit, came as somewhat of a surprise and the apprehension on the part of some that the Association's financial condition was becoming impaired was allayed and talk of immediate increases in dues was changed to a recommendation that the dues remain as they are—at least for the time being.

One of the most active committees is the Committee on Research and Publications. Three operations were reported by J. P. Miller: (1) The cumulative index project, financed by a grant from the Ford Foundation, is taking on final form, but it is now proposed that the coverage be enlarged to include more journals, contingent upon receiving an additional financial aid. If these plans materialize, this project will result in the publication of some 2,200 pages, probably in five volumes. (2) A proposal to seek funds to finance the translation of classics and modern works. (3) A proposal to publish surveys of current economic thinking in selected foreign countries.

Professor Miller also commented on the publication of Volume VIII of the "Readings Series," *Readings in Industrial Organization and Public Policy*, edited by R. B. Heflebower and G. W. Stocking, and announced

that Volume IX, *Readings in the Economics of Taxation*, edited by C. S. Shoup and R. A. Musgrave, is in press and that Volume X, *Readings in Economic Development*, edited by M. F. Millikan and H. J. Bruton, is in preparation. Negotiations are still under way concerning the cosponsorship of William Jaffe's life and works of Walras.

The Secretary presented the report of the Committee on Elections and the certification of the election of new officers for the year 1959 as follows:

In accordance with the bylaws on election procedure, I hereby certify the results of the recent balloting and present the reports of the Nominating Committee and the Committee on Elections.

The Nominating Committee, consisting of Simon Kuznets, Chairman, O. H. Brownlee, Gerhard Colm, Frederick H. Harbison, J. Richard Huber, and Margaret Myers, presented to the Secretary the list of nominees for the respective offices:

For President
Arthur F. Burns

For Vice-Presidents	*For Executive Committee*
Kenneth E. Boulding	George L. Bach
Raymond T. Bowman	Howard R. Bowen
Oskar Morgenstern	Abram L. Harris
Lloyd G. Reynolds	Edward S. Shaw

The Committee on Elections, consisting of Milton Friedman, Chairman, Karl de Schweinitz, F. S. Deibler, and James Washington Bell, prepared biographical sketches of the candidates and ballots were distributed early in November. The canvass of ballots was made on December 15, 1958, and the results were filed with the Secretary.

From the report of the Committee on Elections, I have the following information:

Number of envelopes without names for identification	69
Number received too late	21
Number of defective ballots	4
Number of legal ballots	3,388
Number of returns from the mail ballot	3,482

On the basis of the canvass of the votes cast, I certify that the following persons have been duly elected to the respective offices:

President (for a term of one year)
Arthur F. Burns
Vice-Presidents (for a term of one year)
Kenneth E. Boulding
Lloyd G. Reynolds
Members of the Executive Committee (for a term of three years)
George L. Bach
Abram L. Harris

The Secretary reported that the amendments to the Charter and Bylaws were approved by an overwhelming vote and that the first step in the implementation of these bylaws will be put into effect by the 1959 Nominating Committee now being constituted. The changes as approved read as follows:

Amendments to the Bylaws of the American Economic Association, Effective December 30, 1958

Section III. Officers.

Amend Paragraph 1 to read:

1. The Association shall have the following officers who shall be elective officers: a President, a First Vice-President, two additional Vice-Presidents, and six elected members of the Executive Committee. The terms of office of the President and the three Vice-Presidents shall each be one year. The terms of office of the six elected members of the Executive Committee shall each be three years, two of the six terms to expire each year.

The First Vice-President elected in any year shall succeed to the presidency in the following year. Each regular term of office shall coincide with the calendar year or a multiple thereof.

Delete Paragraph 2 and substitute the following paragraphs, respectively, for Paragraphs 3, 4, 5.

2. Elective officers shall be chosen through elections to be held during the last three *months of the terms of office of their predecessors*. Each member shall be given the opportunity to vote by mail. The results of the election shall be certified and announced by the Secretary at the annual business meeting.

3. The Association shall have the following officers who shall be appointed by the Executive Committee: a Secretary, a Treasurer, a Managing Editor, and a Counsel. The terms of office of each of these officers shall be three calendar years.

4. The Executive Committee shall consist of the President, the three Vice-Presidents, the Secretary, the Treasurer, the Managing Editor, the two ex-Presidents who have last held office, and six elected members, provided that the Secretary, the Treasurer, and the Managing Editor shall not be entitled to vote in the Committee's meetings.

Section IV. Duties of Officers.

Amend by the insertion of a new paragraph 2 to read:

2. Before October 1 of each year, the First Vice-President of the Association shall appoint a Nominating Committee for the following year, this Committee to consist of a past officer as Chairman and not less than five other members of the Association. The names of the Committee shall be published in the issue of the *American Economic Review* immediately following their appointment, together with an invitation to the general membership that suggestions of nominees for the various offices other than the presidency be sent to the Chairman of the Committee. The Nominating Committee for each year shall be instructed to present to the Secretary of the Association on or before September 1 a nominee for the first vice-presidency and two or more nominations for each other elective office to be filled, except the presidency, all these nominees being members of the Association. The members of the Nominating and Executive Committee shall constitute an Electoral College which shall consider the nominee of the Nominating Committee for the First Vice-Presidency and select a single candidate for that office; but space shall be provided on the ballot for that office for the individual voter's alternative choice.

The First Vice-President may, at his discretion and with the advice and consent of the Executive Committee, appoint a Program Committee for the annual meeting of the succeeding year.

After this new Paragraph 2 to Section IV would follow the present Paragraphs 2, 3, 4, 5, and 6, but renumbered 3, 4, 5, 6, and 7 except to amend the new Paragraph 6 to read:

The Managing Editor shall, with the advice and consent of the Executive Committee, appoint members to an Editorial Board to assist him. He shall be ex officio member and chairman of this Board. The Editorial Board shall have charge of the publication of the *American Economic Review*.

The retiring president, G. W. Stocking, presented President-elect A. F. Burns, who, when inducted into office, responded with brief remarks of acceptance. He expressed his appreciation of the work of his predecessors, who have built the Association, not only into an effective organ of the profession, but a force in society. He indicated his desire to draw upon the wisdom and experience of the officers and expressed a hope that his efforts would be fruitful.

A call for unfinished business brought forth no response, and, there being no items of new business, the President called for the report of the Committee on Resolutions. This report was read by F. T. de Vyver and was unanimously approved. The resolution follows:

Be it resolved that the Association express its thanks and grateful appreciation to: President George W. Stocking for his generous personal efforts in planning and executing the program for the annual meeting; James Washington Bell, our Secretary-Treasurer,

who as always has gone the second mile; the members of the Executive Committee and the many other members of the Association who contributed papers and discussions for the successful meetings; George W. Mitchell, Chairman of the Joint Committee on Local Arrangements; and to J. Charles Partee, William J. Korsvik, Lawrence L. Peterson and Harold L. Cheadle, who aided the chairman in their capacities as subcommittee chairmen; Adolph Berger and the Illinois State Employment Service which rendered an excellent facility; and the members of the press who performed effective services; other professional organizations and their local representatives who co-operated so generously; the Chicago Convention Bureau, and the management and staff of the Palmer House who have provided graciously for our daily needs.

Respectfully submitted,

Frank T. de Vyver, *Chairman*
Melvin G. de Chazeau
Peggy Heim

The meeting was adjourned at 6:00 p.m.

James Washington Bell, *Secretary*

REPORT OF THE SECRETARY FOR THE YEAR 1958

The minutes of the Executive Committee are a record of official acts of the Association. The minutes of the April and December, 1958, meetings are presented below. Following these minutes is a summary of the year's operations, with comments and interpretations concerning the Association's activities.

Minutes of the Executive Committee Meetings

1. Minutes of the spring meeting held in Rye, New York, April 4-5, 1958:

The *second meeting* of the *1958 Executive Committee* was held at the Westchester Country Club, Rye, New York, April 4-5, 1958. The following were present: G. W. Stocking, F. S. Deibler (for J. W. Bell), M. A. Copeland, Solomon Fabricant, B. F. Haley, S. E. Harris, R. A. Musgrave, G. J. Stigler, Mabel F. Timlin, James Tobin, and E. E. Witte. Absent were: J. W. Bell, W. J. Fellner, and Faith Williams. Attending as members of the Nominating Committee: Simon Kuznets, O. H. Brownlee, Gerhard Colm, F. H. Harbison, J. R. Huber, and Margaret G. Myers. Attending as guests: F. H. Knight, B. W. Lewis, J. P. Miller, and W. L. Thorp.

1. *President's Remarks* (G. W. Stocking). The meeting was called to order at 10:00 a.m. President Stocking made a brief statement on the agenda and called attention to the fact that the Executive Committee would meet with the Nominating Committee to ratify the nomination for the presidency for the year 1959.

2. *Minutes*. The minutes of the December 27 and 30, 1957, meetings of the Executive Committee, as presented in page proof, were discussed and were approved with minor corrections to be made by M. A. Copeland and F. S. Deibler.

3 and 4. *Reports of the Secretary, Treasurer, and Finance Committee*. F. S. Deibler, Acting Secretary, summarized the activities of the Secretary's Office, including the status of membership, bank balances, investment portfolio changes, and progress in the preparation of the 1957 supplement to the 1956 *Handbook*. A tentative budget of income and expenses for the Association was presented, which indicated a probable deficit for the year of $7,000 to $8,000. These reports were accepted and it was suggested that detailed budgets for the Association be made annually.

It was VOTED that the President appoint a committee to be composed of the Managing Editor, the Secretary-Treasurer, and three other members, to consider ways and means of meeting deficits.

Complimentary Members. The present minute concerning complimentary memberships reads as follows: "It was VOTED that past presidents aged sixty-five and over and past secretaries, regardless of age, be honored with complimentary memberships." It was VOTED that this minute be changed to read: ". . . past presidents and past secretaries be honored with complimentary memberships."

5. *Report of the Managing Editor* (B. F. Haley). A panel of names suitable for nominations to serve on the Editorial Board was submitted by the Managing Editor and was approved by the Executive Committee. The choice of the three nominees to fill vacancies is to be ratified at the December meeting.

On recommendation of the Managing Editor, it was VOTED that the unexpended balance of the appropriation for the Membership Survey revert to the general funds of the Association.

It was VOTED that the Managing Editor be authorized to purchase a De-Jur dictating machine. The sum of $200 was appropriated for this purpose.

6. *Reports of Standing and Special Committees.*

6a) *Committee on Research and Publications* (J. P. Miller). A progress report was made on the "Readings Series" and the Cumulative Index. In connection with the latter project, Professor Miller reviewed his conversations with the Ford Foundation and suggested that it would be helpful in light of these conversations if the Association would commit itself for an amount up to $6,500, the estimated cost of indexing the *American Economic Review*. It was VOTED that a commitment not to exceed $6,500 for the indexing project be made.

On recommendation of the Committee on Research and Publications, it was VOTED to authorize the President to appoint an *ad hoc* committee to explore appropriate procedures for familiarizing American and other English-speaking economists with the research and economic thinking of economists in various foreign countries. The appointment of such an *ad hoc* committee was approved and the President was authorized to approach the Ford Foundation for a small grant—not to exceed $2,500—to defray the expenses of such an exploratory committee and to prepare more explicit proposals along these lines for the December meeting of the Executive Committee.

Two new volumes in the "Readings Series" are ready to go to press this fall: Volume VIII, *Industrial Organization and Public Policy*, by R. B. Heflebower and G. W. Stocking, and Volume IX, *Economics of Taxation*, by C. S. Shoup and R. A. Musgrave.

Authorization was requested and was granted the Committee to negotiate satisfactory arrangements with foreign cosponsors for the publication of William Jaffe's life and works of Walras.

6b) Committee on Economic Education (B. W. Lewis). A report was submitted, in which two projects were presented:

(1) A study, to be financed by a foundation, of leading textbooks used in secondary school courses in American history, economics, social studies, prblems of democracy, etc., to learn the nature and coverage of their present economic content. A definite plan of operation was outlined.

(2) A study to be undertaken (preferably by the Social Science Research Council), covering the whole area of social science teaching in secondary schools designed to disclose: (*a*) what is actually being done (curriculum), (*b*) the facts regarding the preparation and training of teachers, and (*c*) the results (testing).

The Committee recommends an intensive study based on a relatively small stratified random sample of high school students and teachers, using interviewing techniques similar to those used by the Survey Research Center in its annual survey of consumer finances.

The Committee proposed to approach the SSRC and request that organization to undertake a pilot study of the kind outlined. If the SSRC is not interested, the Committee proposed to approach a foundation for support of an independent study of economic education in the schools under the supervision of the Committee on Economic Education.

It was VOTED to accept the report.

After a general discussion of the proposals, it was VOTED:

(1) That the Executive Committee endorses the proposal of the Committee on Education to conduct a study of the economic content of textbooks used in secondary school courses in economics, American history, and social studies, as outlined in the report of the Committee on April 4, 1958, and that the President of the Association and the Chairman of the Committee be authorized to seek foundation support—not to exceed $35,000—and to authorize the Committee to proceed with the study as soon as funds become available.

(2) That it is understood that a report by the Committee as outlined will be the property of the Association and that a progress report will be made at the December meeting.

(3) To approve the objective of the second part of the Committee's proposal and to authorize the Committee to explore the project further and to consult with the SSRC and to report to the December meeting of the Executive Committee.

At the request of Chairman Lewis, the terms of Archibald McIsaac and P. J. Strayer were extended for another three years (i.e., 1958-60).

6c) Committee on Honors and Awards (G. W. Stocking). Professor Stocking asked to be relieved from the Committee and a number of names were considered as a successor. Clair Wilcox was later appointed chairman.

After an extended discussion, it was VOTED to continue the Clark award. It was also VOTED to authorize the President to appoint a committee to inquire into the desirability of establishing other ways of recognizing the scientific achievements of younger members and to report at the December meeting of the Executive Committee. M. A. Copeland was appointed chairman.

6d) Committee on Foreign Honorary Members. No action was taken.

6e) Nominating Committee (Simon Kuznets). During the afternoon session, the Nominating and Executive Committees met as an electoral college and considered nominees for the 1959 officers. It was unanimously agreed to nominate Dr. Arthur F. Burns for the presidency. Choices were agreed upon for the vice-presidents and members of the Executive Committee, subject to acceptance by the respective nominees.

The electoral college discussed the nominees for representatives to the SSRC and later

selected Gardner Ackley for the post. It was VOTED to reappoint F. H. Knight as the representative to the ACLS for a term of four years.

7. *Reports of Council Representatives.*

7a) *ACLS* (F. H. Knight). Professor Knight made an oral report of the annual meeting of the ACLS. A brief written report was filed.

One issue that required action was the ratification of the amendments to the constitution and bylaws of the ACLS. No significant changes were made in these amendments, which consisted mainly of a transfer of clauses from the constitution to the bylaws and a few changes in the representation and of the officers of the ACLS. It was VOTED to ratify the amendments as presented by Professor Knight.

7b) *SSRC* (J. P. Miller). The formal report submitted at the December meeting was brought up to date. The SSRC has received a Ford Foundation grant of $225,000 to carry on the work of the Committee on the Analysis of Economic Censuses which has proposed six monographs based on recent census materials. The SSRC has instituted a program of postdoctoral research grants designed to facilitate the work of doctoral candidates.

7c) *NBER* (W. L. Thorp). Professor Thorp presented a brief oral report of progress. A full report appeared in the "Proceedings" of the 1957 annual meeting.

8. *Annual Meetings.*

8a) In 1958 the Association will meet in the Palmer House, Chicago, December 27-29; in 1959 in the Sheraton-Park Hotel, Washington, D.C., December 28-30.

8b) It was VOTED to release the option on the Roosevelt Hotel in New Orleans for December 28-30, 1960, and to authorize the President and Secretary to choose between Cincinnati and St. Louis for this date, depending on the facilities available. St. Louis was later selected, with the Chase-Park Plaza as headquarters.

8c) It was VOTED to authorize the President and the Secretary to take up the option on the Conrad Hilton Hotel, Chicago, for the 1964 meeting.

9. *Unfinished Business.*

9a) *Amendments to the Bylaws.* The proposed amendments had been approved in principle at the December, 1957, meeting of the Executive Committee. It remained only to approve the minor changes in the wording of the amendments. The proposed amendments in their approved form appear in the minutes of the business meeting.

It was VOTED that the proposed amendments to the Charter and Bylaws be approved and become effective upon ratification by the members and will be controlling in the election of Presidents, beginning with the President for the year 1961 and for all other elective officers whose terms of service begin in the year 1960.

It was VOTED to authorize the Secretary to prepare a mail ballot concerning the amendments, to be included with the ballots for the election of the officers in November, and to report the result at the December meeting of the Association.

9b) *Institute of International Education.* President Stocking reported that in consultation with the Institute of International Education he had designated the following individuals to serve as members of an advisory and policy board to the Institute of International Education: Theodore Morgan, Chairman, Carter Goodrich, D. Gale Johnson, I. B. Kravis, Lorie Tarshis, R. T. Fels, and Michael Hoffman.

9c) *Carnegie Corporation Travel Grants.* It was thought advisable that the precedure to be followed in making travel grants to foreign congresses should be reasonably uniform between the AEA and other social science organizations. It was VOTED that the President ascertain the procedure adopted by the SSRC and ACLS, and if he finds that an economist is on the committee of the SSRC that is to administer the grant by that organization, that he appoint him and two other members of the Association to draft a procedure for making travel grants by the AEA.

It was VOTED that the President take such action in respect to the two applications now in hand as he thinks appropriate.

9d) It was VOTED to ratify the mail ballot authorizing the appointment of F. S. Deibler as Acting Secretary during the absence of Secretary Bell.

10. *New Business.*

10a) *Appointment of Secretary-Treasurer and Managing Editor.* It was VOTED to reappoint B. F. Haley as Managing Editor for a period of three years.

It was VOTED to reappoint J. W. Bell as Secretary-Treasurer for a period of three years, contingent upon a report that his state of health will permit him to carry the responsibilities of the office, and to authorize the President to appoint a committee to consider the matter of his successor at the expiration of his term.

10b) *Republication Rights.* A complaint was received from L. W. Klein, Editor of the *Monthly Labor Review*, concerning the difficulty of publishing excerpts from papers given at the meetings of the AEA. After some discussion, the Executive Committee approved in

substance the proposals of S. E. Harris. These were:

(1) That in the publication of papers given at the meeting of the AEA the Association have prior claims over all other professional economic journals, inclusive of those represented at the annual meeting of editors.

(2) That when papers are jointly sponsored, the publication be a matter of negotiation between the AEA and the other sponsoring society.

(3) That contributors be given an opportunity to present a summary of their paper and adequate copies of their entire paper for the press.

(4) That if they do so it is with an understanding that nonscientific papers and journals will have access to the papers (but to be published after time of delivery).

(5) But where papers are to be republished substantially or *in toto*, clearance should be had with the Secretary-Treasurer.

(6) That contributors be informed that if they do not do so, they may still give access to their papers to nonprofessional papers and journals upon request of any particular editor (but this again should be cleared with the Secretary-Treasurer).

(7) That upon application (e.g., the *Monthly Labor Review*), interested parties be informed of these conditions.

(8) That participants in the AEA programs be informed of these facts.

10c) *Asia Foundation*. It was VOTED to refer the request from the Asia Foundation to the Committee on Travel Grants to explore the possibilities of the proposal and consult with the Anthropological Association and with the American Sociological Society in reference to the experience of these associations in co-operating with the Asiatic scientific associations.

10d) *Free Europe Press*. The Free Europe Press expressed a desire to purchase 100 copies of the *American Economic Review*, to be distributed behind the Iron Curtain for the purpose of achieving "a good understanding of America through our literature." The desire was expressed that the AEA act as a sponsor for the undertaking of the Free Europe Press as was claimed to be done by some of the large book companies, as McGraw-Hill, Harper & Brothers, and Simon and Schuster. It was the sense of the Executive Committee that the AEA could not act as a sponsor of the undertaking, however meritorious it may be. Such action would be beyond the constitutional objectives of the Association.

It was VOTED that the Secretary notify the Free Europe Press that the Association was willing to sell the 100 copies of the *American Economic Review* at a quantity discount, to be delivered in bulk in the New York office, or, if the addresses of the recipients were furnished, mailed direct from the office of our publisher.

The Secretary was instructed to find further information concerning Free Europe Press and to report same to the Executive Committee.

10e) *Economic Library Selections*. The Executive Committee considered the Johns Hopkins project for continuing *Economic Library Selections*. While the Executive Committee took no official action, members of the committee unanimously recognized the importance of continuing the project under the same terms that it had been conducted in the past; i.e., without charging a subscription fee for its distribution. Members of the committee expressed the strong conviction that the project was extremely useful to libraries and the hope that the Johns Hopkins University Department of Political Economy would be able to secure foundation funds for the project's continuation. The committee authorized the President to so advise Fritz Machlup.

10f) *Central Center for Scientific Societies*. Solomon Fabricant reported on a proposal to establish in New York a Central Center for Scientific Societies to house various organizations and to furnish central computing and other equipment. From the discussion, it was evident that the American Economic Association was not interested in such a project at this time.

10g) *Complimentary Memberships for Two Russian Economists*. It was VOTED that, as an appreciation of the papers furnished by Professors V. Aboltin and T. S. Khachaturov by the membership of the AEA and as an aid toward the development of a better understanding between the economists in their country and economists in America, a complimentary membership for the period of one year be granted to each of these two Russian economists.

10h) *Certification of Professional Competence of Economists*. M. A. Copeland moved the appointment of a committee to study and make recommendations for a method of certification of the competence of professional economists. After considerable debate, the motion was lost.

11. *Program*. During the balance of the meeting, President Stocking reviewed his proposed program for the 1958 annual meeting, session by session.

The meeting adjourned at 12:20 p.m.

2. Minutes of the Christmas meetings held in Chicago, Illinois, December 26 and 29, 1958:

The *third meeting* of the *1958 Executive Committee* was called to order at 6:30 p.m., December 26, G. W. Stocking presiding. The others present were: J. W. Bell, J. D. Black, M. A. Copeland, Solomon Fabricant, W. J. Fellner, B. F. Haley, S. E. Harris, R. A. Musgrave, G. J. Stigler, Mabel Timlin, and E. E. Witte. Absent was: James Tobin. Present, as guests, were: R. A. Gordon, F. H. Knight, S. E. Leland, Fritz Machlup, and J. P. Miller.

The *first meeting* of the *1959 Executive Committee* was held on December 29, at 6:00 p.m., A. F. Burns presiding. Present were: G. L. Bach, J. W. Bell, M. A. Copeland, W. J. Fellner, B. F. Haley, A. L. Harris, S. E. Harris, R. A. Musgrave, L. G. Reynolds, G. J. Stigler, G. W. Stocking, and Mabel Timlin. Absent were: K. E. Boulding, Solomon Fabricant, James Tobin, and E. E. Witte. Present, as guests, were: J. D. Black, F. H. Knight, J. P. Miller, and W. L. Thorp.

The items below follow the order of business as listed on the agenda and not the sequence of order as they are transacted at the meetings.

1. *President's Remarks* (G. W. Stocking and A. F. Burns). The Friday meeting was called to order during the course of the dinner hour, when Professor Stocking outlined the procedure to be followed and proposed advancing those items on the agenda which had to be disposed of in order to wind up the current year's business and leave free for the consideration of the 1959 Executive Committee those matters of continuing character and new business. The Monday night meeting, presided over by Professor Burns, was also called to order during the dinner hour.

2. *Minutes*. The minutes of the April 4-5, 1958, meeting, held at Westchester Country Club, Rye, New York, were approved in the corrected form dated July 30, with minor corrections.

3. *Report of the Secretary* (J. W. Bell). The organization of the local arrangements committee, its meetings, problems of hotel facilities, the printing of the joint program, exhibits, the employment register, and other matters were described. Plans for future meetings in Washington, D.C., St. Louis, New York, and Chicago were again announced, and attention was called to 1962 and 1963—dates which are still open and calling for a decision, preferably at the spring meeting of the Executive Committee.

The growth of membership and its composition were described. Attention was called to the fact that the *1957 Supplement* to the *1956 Handbook*, mailed to members in July, 1958, would be the last issue of the "who's who" type. The next handbook supplement will contain only names and addresses of new members. The activity of the "Vacancies and Applications" section of the *Review*, exchange advertisements, paid advertisements, and advertising rates were discussed, as were other matters of office management, the use of the mailing list, rights to republish and translate articles from our publications, our relations with our publishers, and inquires made concerning publication costs with other printers.

A report from Richard D. Irwin, Inc., on the "Readings," "Translation," and "Survey" series was submitted, with the comment that we have not been able to take any profit from these publications since the proceeds of sales have served as working capital for the production of new volumes.

Some thousand copies of the information booklet were distributed this year. Suggestions were solicited for improving this useful little booklet.

The Secretary reported receiving news of the death of Faith Williams on October 20, 1958. It was VOTED that the Secretary write on behalf of the officers of the Association to members of the family, expressing our condolence.

4. *Reports of the Treasurer, Finance Committee, and Auditor* (J. W. Bell). Copies of the balance sheet, income and expense statement, and a cumulative income-expense table showing results for the period 1948-58 were circulated, as was also a list of investment holdings (showing purchases and sales made during the fiscal year) and copies of the Auditor's Report. Financial results of the year were also discussed and significant items were pointed out. It was reported that the Association had a net income of $5,600, compared with a loss of $9,700 last year—this instead of an anticipated deficit of $6,000 to $7,000. The Association can probably carry on for some time without raising dues, even without depending upon profit from sale of securities (which should be considered a nonrecurring item), and if we are reconciled to using surplus as a reserve to meet operating losses; but if surplus is to be used as a backlog to meet exigencies or for promotion of developmental projects, the Association should consider asking its members to pay more nearly

the value of services they receive. The situation is not unlike that of 1949, when the Association raised dues from $5.00 to $6.00. When the time comes for an increase in dues, the Treasurer suggested that a compromise be adopted which would give members a choice of continuing to pay $6.00 dues to receive either the *American Economic Review* or the *Papers and Proceedings* or $8.00 dues for both (with no change in subscription rates).

After giving a brief account of the Association's investment holdings and changes made during the year, the Treasurer reported the death of Roy C. Osgood, who had served as Chairman of the Finance Committee since 1938, and the appointment of C. D. Anderson to the Committee. It was VOTED to accept the report, approve the appointment of C. D. Anderson, and to reappoint the present incumbents, with C. W. Farnham as Chairman, with the thanks and appreciation of the officers of the Association. The Secretary was asked to write a letter of condolence to members of Mr. Osgood's family.

It was VOTED to accept, with thanks, the report of the auditor, David Himmelblau & Company.

5. *Report of the Managing Editor* (B. F. Haley). A mimeographed report was passed around which contained tables and text dealing with the number of manuscripts received and the percentage accepted, the distribution of subject matter content, articles, reviews, and so forth, number of copies printed, size, and costs, and budget figures for 1959. Professor Haley discussed the use of foreign correspondents and specialists and informed the Executive Committee that the program of survey articles, financed by the Rockefeller Foundation grant, is under way and that two of the articles should appear in 1959. It was VOTED to accept the report and to approve the budget request of $52,000 for 1959. It was also VOTED to appoint three new members to the Editorial Board, for three-year terms beginning in 1959; namely, R. T. Fels, A. C. Harberger, and W. F. Stolper.

6. *Reports of Standing and Special Committees.*

6a) *Reports of the Committee on Research and Publications, Ad Hoc Cumulative Index Advisory Committee, and Ad Hoc Committee on Promoting Knowledge of Foreign Economic Contributions* (J. P. Miller). Professor Miller submitted reports on the work of these three committees.

Cumulative Index Project. Satisfactory progress was reported. Experience on this project and the opinion of the *Ad Hoc* Advisory Committee prompted the recommendation that the scope of this project be extended to include English-language journals published in Asia and some other less developed areas (Japan, India, Ceylon, Pakistan, and the West Indies) in order to obtain a more nearly complete coverage of English-language journals. This would call for additional foundation funds—funds sufficient to finance the publication of what might become five volumes of 2,200 pages, to be sold on a subsidized basis for, say, $10. The Committee asked for authorization to raise these funds. This part of the report was accepted and it was VOTED to approve the enlarged project, with authorization to solicit the necessary financial aid. The size of the edition and the price were left open to subsequent determination.

Translations. The second and third recommendations of the Committee involved proposals to promote the translation of books and articles and to encourage the IEA in expanding its publication program of translations. These proposals were discussed at length, along with the item immediately following.

Promotion of Knowledge of Foreign Contributions. A report of this *Ad Hoc* Committee was circulated and ordered published. The Committee's recommendations, involving the publication of surveys of economic research in foreign countries, translations of books by the AEA (involving some overlapping of subject matter with the item immediately preceding), were discussed at both Friday and Monday meetings.

The above recommendations were not acted upon. The Committee was asked to confer with other agencies and to clarify the role of the AEA in promoting these objectives. A further report on these matters is expected at the spring meeting.

In connection with the estimates of costs of printing and publication of the "Translation" and "Survey" volumes, the report of Richard D. Irwin, Inc., was discussed, and it was VOTED that the Committee on Research and Publications be authorized to review our contract with Richard D. Irwin, Inc.

6b) *Committee on Economic Education* (B. W. Lewis). The Committee reported two projects under way: (1) a proposed study of textbooks in American history, social studies, and economics now being used in secondary schools; (2) the state of the social sciences in the secondary schools. Funds are expected for the first project and the staff is being organized to carry it out. The second project has not yet taken concrete form. It involves collaboration of the councils and other groups. Fuller reports are expected at the spring meeting.

An appropriation not to exceed $200 was VOTED to defray necessary traveling expenses for this purpose.

The preparation of a roster of our members interested in economic education (those answering question 7 of the *1956 Handbook* questionnaire) has been completed and collaboration with the Joint Council on Economic Education in its use is being continued.

6c) *Committee on Honors and Awards* (Clair Wilcox). No report. The President has appointed Gardner Ackley and Fritz Machlup to replace E. S. Mason and W. B. Stewart, whose terms have expired. The Committee as reconstituted will report at the spring meeting.

6d) *Committee on Academic Freedom and Civil Liberties* (Fritz Machlup). A report was read, which was accepted and ordered published below. The Committee reported that no issues of academic freedom had come to their attention during the current year.

6e) *Committee on Additional Awards to Younger Economists* (M. A. Copeland). The Committee has given much thought to different types of honors and awards and has prepared a questionnaire which it plans to send to previous members of this Committee and to a sampling of other members whose opinion might give direction to specific recommendations.

The acceptance of the Alpha Kappa Psi Foundation award of $100 was not acted upon. This matter, along with other proposals, will be submitted at the spring meeting.

6f) *Committee on Association Deficit* (S. E. Leland). A report was read which contained the following four recommendations:

(1) Accrual accounting for handbook costs.

(2) To abridge or abolish publication of the *Papers and Proceedings*. (This is a policy matter, referred to the Executive Committee.) It was VOTED to authorize the appointment of a committee to report on the scheduling and financing of the *Papers and Proceedings*.

(3) To increase the volume of advertising and to accept commercial advertising.

(4) To authorize the necessary increase in staff of the Secretary's Office to implement a program to increase membership.

Recommendations 1, 3, and 4 were adopted and it was VOTED to accept the report, with thanks to the Committee (which was not dismissed) and the report was ordered published.

6g) *Committee on Procedure for Awarding Carnegie Corporation Travel Grants* (G. W. Stocking). The terms of the grant, along with correspondence with other associations receiving them, were used as a basis for drafting a recommended procedure for administering the grant. As amended by the Executive Committee, the procedure was adopted and is published below.

It was VOTED to approve ex post facto P. A. Samuelson's application for a travel grant to the IEA Corfu conference.

6h) *Nominating Committee* (J. D. Black). Professor Burns announced that J. D. Black had accepted the chairmanship of this Committee. A panel of names was discussed from which the other members were to be selected.

7. *Miscellaneous Reports.*

7a) *International Economic Association* (H. S. Ellis and Gottfried Haberler). Letters from Professors Haberler and Ellis requested that our relations with the IEA be taken up at the spring meeting for full discussion. The Secretary reported receiving an account of the Corfu conference and a description of the plans for the 1959 meeting from the Secretary of the IEA, Madame Helene Berger-Lieser.

Institute of International Education Advisory Committee. A summary report was received from Theodore Morgan, Chairman of the Policy Making and Advisory Board, describing the summer Economics Institutes for newly arrived foreign graduate students in the fields of economics and agricultural economics. The report appears below.

7b) *Committee of Judges for the Open Competition* (W. J. Fellner). In implementing the session on selected papers, Professor Stocking appointed a Committee of Judges, of which W. J. Fellner served as Chairman and James McKie as Secretary. A report on the 1958 open competition was submitted by Professor McKie. The report was ordered published and it was decided that our experience justifies continuation of the experiment.

8. *Reports of Representatives.* Brief statements were made by F. H. Knight, ACLS, and R. A. Gordon, SSRC. Reports of the Council representatives and our representatives on NBER and AAAS are published below.

9. *Unfinished and Miscellaneous Business.*

9a) *Annual Meeting Schedule.* Commitments have been made for time and place of the following meetings: 1959, December 28-30, Washington, D.C., Sheraton-Park Hotel; 1960, December 28-30, St. Louis, Chase-Park Plaza Hotels; 1961, December 27-29, New York

City, Hotel Commodore; and 1964, December 27-30, Chicago, Conrad Hilton Hotel. The time and place for the 1962 and 1963 meetings was left for determination at the spring meeting.

9b) *Results of Ballot on Changes in Bylaws*. The Secretary reported that the poll on ballot changes was overwhelmingly favorable.

9c) *Asia Foundation*. It was VOTED to ratify the Executive Committee mail ballot sent out in May, accepting the Asia Foundation grant of $2,500 to be used for the general purpose of bringing closer association between American and Asiatic economists. It was VOTED that the President and Secretary be authorized to administer the funds in accordance with the terms of the grant. Professor Stocking reported that an exception to these terms was made in the case of one economist from Africa participating in this year's program and that this was done by authorization of the Foundation.

9d) *Use of Mailing List*. The American Assembly proposal to share costs in circulating one of their booklets, *The United States Monetary Policy*, was not approved, on the grounds that we are not ready to embark upon subsidizing publications other than our own.

9e) *Recognition of the Social Sciences*. A communication from Executive Director Evron M. Kirkpatrick, of the American Political Science Association, was presented which proposed a general conference on the present status of professional associations in the social sciences. This matter was considered as falling more appropriately within the scope of action of the SSRC and was so referred.

9f) *Program Preview for 1959*. The balance of the meeting of the Executive Committee was devoted to the discussion of a program preview for 1959.

Both meetings were adjourned at 11:00 p.m.

Activities and Operations

The following gives a summary of the events of the year, together with the activities of committees and representatives.

Annual Meetings. Preliminary figures for the Chicago meeting indicate that over 2,500 were registered at the Palmer House, of which the large majority were members of the American Economic Association. Allied social science associations meeting jointly were: American Association of University Teachers of Insurance, American Farm Economic Association, American Finance Association, American Marketing Association, American Statistical Association, Biometric Society, Econometric Society, Industrial Relations Research Association, and Regional Science Association.

Future meetings now scheduled are: 1959, Washington, D. C., Sheraton Park Hotel; 1960, St. Louis, Chase-Park Plaza; 1961, New York City (joint meeting), Hotel Commodore; 1964, Chicago (joint meeting), Conrad Hilton Hotel. No commitments have yet been made for 1962 and 1963.

Membership. The figures for members and subscribers, this year and last, are shown in Exhibit II following this report. A net gain of 589 members and 167 subscribers, or a total of 756, which compares with the total of 507 last year and 864 in the special year of 1956 and about 200 per annum from 1950 to 1955. Membership figures are significant in view of any contemplated increase in dues. No special direct mailing efforts have been made during the past year to solicit new members, although the use of mailing lists readily at hand could be processed if office facilities were available.

In co-operation with the ICA, some hundred membership invitations have been sent to foreigners, of which about half have been accepted for membership.

The 1956 Handbook and Supplements. Following the deadline for the *1957*

Supplement, the "who's who" questionnaire was terminated. The next supplement will be a name-and-address rather than a "who's who" issue, to be published next year or the year after, subject to the determination of the Executive Committee.

American Economic Review. The Managing Editor's report, published below, describes the size, content, and budget for the *Review* and the activities of the Editorial Board and the Editor's Office. Series of photographs and biographical sketches is continued in the March number only.

Vacancies and Applications Section. No substantial change has occurred in this department. We still run four to seven pages of applications for positions and more vacancies are being announced. This is not a service affecting a very large segment of our members, but it is appreciated by those who use it and this does not seem to be the time to drop it.

Use of Mailing List. With the acquisition of the Elliott addressing machine, we have granted permission more liberally to publishers and allied associations to send out materials of interest or of educational value to our members and at the same time we have been able to net a small profit on these operations.

Advertising. There has been no increase in the volume of advertising in the *Review*. We have held this section to about forty pages (thirty paid and ten or more exchange) and have confined all advertisements to the back of the volume. No increase in rates has been made since 1957, although a change is contemplated, to be made effective in 1960.

Permission to Reprint and Translate Articles and Papers from Our Publications. This is a privilege granted to reputable journals and publications and in other cases where it is thought that the influence of our contributions can and should be extended. Token payments have been passed on to authors in the few instances where payment has been offered.

Papers and Proceedings. The size of this volume continues to present problems of program making, editorial management, and economy. However, these are under satisfactory control this year.

Information Booklet. A revised edition of the twenty-page description of the purposes and activities of the Association is issued each year. Last year a thousand copies were printed and circulated and the supply was exhausted. Copies are available on request.

Committee Activities. The list of members of all standing and *ad hoc* committees will be found at the end of this report.

Committee on Research and Publications, Cumulative Index Advisory Committee, and Ad Hoc Committee on Promoting Knowledge of Foreign Economic Contributions (J. P. Miller, Chairman). A report on the activities of these committees is published below. It relates chiefly to the publication of Volume VIII of the "Readings Series" and progress on Volumes IX and X; proposed volumes for "Translation Series" and negotiation for underwriting the publication of William Jaffe's life and works of Walras; the preparation of survey articles to supplement Volumes I and II of the "Survey Series"; the cumulative index of economic journals project; the activities and recommendations of the *Ad Hoc* Committee designed to explore ways of making the work of foreign economists available to American economists.

Committee on Economic Education (B. W. Lewis, Chairman). The Committee was authorized to seek funds to finance a project to conduct a study of elementary textbooks in the social science field and to make a survey of the status of the teaching of social sciences in the secondary schools. In co-operation with the Joint Council on Economic Education, a register of economists in the field of economic education was compiled, under the direction of Dean Eugene Swearingen.

Committee on Honors and Awards (Clair Wilcox, Chairman). The Committee is being reactivated and a report will be expected at the spring meeting.

Committee on Additional Awards to Younger Economists (M. A. Copeland, Chairman). Proposals for new awards have been prepared, and a questionnaire has been drafted which will be circulated to former members of the Committee on Honors and Awards and to a sampling of others interested. It is hoped that reactions so obtained will give direction to the Committee in making its recommendations as to the number and type of additional awards, if any, which the Association might appropriately sponsor.

Committee on Academic Freedom and Civil Liberties (Fritz Machlup, Chairman). See report below.

Committee on Association Deficit (S. E. Leland, Chairman). At the April meeting of the Executive Committee, some members, disturbed by the report of a substantial deficit in the past year's financial operations and a probable deficit for the current year, proposed the establishment of an *Ad Hoc* Committee to examine our financial condition and to report what should be done about the deficit situation, if anything. The Committee met on several occasions, prepared and discussed a number of exhibits, and has submitted a report containing several recommendations. The report is published below.

Committee on Procedure for Awarding Carnegie Corporation Travel Grants (G. W. Stocking, Chairman). Three awards were made in 1958—all to members attending and participating in the IEA meetings at Corfu, Greece. Since the procedure in awarding these grants by other associations varied somewhat, a record of their practice was obtained from which a draft was drawn which will be proposed as the basis of policy in making our own awards.

International Economic Association. A round table session on capital theory was held on the island of Corfu, Greece, September 4-11, 1958. Some thirty economists attended, five of whom were from the United States. A draft of the program for the September, 1959, round table sessions has been received from the IEA Secretary, Dr. Helene Berger-Lieser. The subject of this eight-day meeting will be inflation. The place has not yet been determined. A report is expected from Gottfried Haberler or H. S. Ellis at the spring meeting.

Institute of International Education Advisory Committee (Theodore Morgan, Chairman). During the year, we were requested to constitute an advisory panel to aid in the establishment of summer Economics Institutes for newly arrived foreign graduate students. A report of this Committee is published below.

Asia Foundation. A fund of $2,500 was received from the Asia Foundation, to be used for the general purpose of promoting closer association between American and Asiatic economists. We expect to use these funds in accordance

with the terms of the grant and the practice of two other beneficiary societies. However, an initial exception was made, with the approval of the Asia Foundation, in the case of a grant to an economist from Africa who was invited to participate in this year's program.

Reports of Council Representatives. Reports of our representatives on ACLS, SSRC, NBER, and AAAS are printed below.

Committees Appointed During the Year

Ad Hoc COMMITTEE ON ADDITIONAL AWARDS TO YOUNGER ECONOMISTS
- Morris A. Copeland, *Chairman*
- Harold M. Somers
- Joseph J. Spengler
- James Washington Bell

COMMITTEE ON ASSOCIATION DEFICIT
- Simeon E. Leland, *Chairman*
- Howard R. Bowen
- Milton Friedman
- Bernard F. Haley, Ex Officio
- James Washington Bell, Ex Officio

COMMITTEE ON LOCAL ARRANGEMENTS
- George W. Mitchell, *Chairman*

COMMITTEE ON PROCEDURE FOR AWARDING CARNEGIE CORPORATION TRAVEL GRANTS
- George W. Stocking, *Chairman*
- James Washington Bell
- Edward S. Shaw

COMMITTEE TO EXPLORE WAYS OF MAKING WORK OF FOREIGN ECONOMISTS AVAILABLE TO AMERICAN ECONOMISTS
- John Perry Miller, *Chairman*
- Abram Bergson
- Hans J. Brems
- Martin Bronfenbrenner
- Kermit Gordon
- Gottfried Haberler
- George Hildebrand
- Albert O. Hirschman
- P. S. N. Prasad
- Robert S. Smith
- Gerald Sirkin, *Secretary*

CUMULATIVE INDEX ADVISORY COMMITTEE
- John Perry Miller, *Chairman*
- Robert Bishop
- Earl J. Hamilton
- Fritz Machlup
- Joseph J. Spengler

FINANCE COMMITTEE
- C. Wells Farnham, *Chairman*
- Corliss D. Anderson
- James Washington Bell

NOMINATING COMMITTEE
- Simon Kuznets, *Chairman*
- O. H. Brownlee
- Gerhard Colm
- Frederick H. Harbison
- J. Richard Huber
- Margaret Myers

PROGRAM COMMITTEE
- George W. Stocking, *Chairman*

COMMITTEE ON ELECTIONS
- Milton Friedman, *Chairman*
- F. S. Deibler
- Karl de Schweinitz
- James Washington Bell, Ex Officio

COMMITTEE OF JUDGES FOR THE OPEN COMPETITION
- William J. Fellner, *Chairman*
- James W. McKie, *Secretary*
- John H. Kareken
- Samuel M. Loescher
- G. Warren Nutter
- Oscar Ornati
- John H. Power
- Lloyd G. Reynolds
- Richard Ruggles
- Anthony M. Tang

Standing Committees and Representatives

COMMITTEE ON ACADEMIC FREEDOM AND CIVIL LIBERTIES
Fritz Machlup, *Chairman* (1959)
Francis M. Boddy (1960)
Howard R. Bowen (1958)

COMMITTEE ON ECONOMIC EDUCATION
Ben W. Lewis, *Chairman* (1959)
Clark L. Allen (1959)
Clark C. Bloom (1958)
Floyd A. Bond (1958)
Arichbald McIsaac (1960)
Paul J. Strayer (1960)

COMMITTEE ON HONORS AND AWARDS
Clair Wilcox, *Chairman* (1962)
J.Douglas Brown (1960)
Jacob Marschak (1960)
Edward S. Mason (1958)
Paul A. Samuelson (1962)
W. Blair Stewart (1958)

NATIONAL BUREAU OF ECONOMIC RESEARCH
Willard L. Thorp (1960)

SOCIAL SCIENCE RESEARCH COUNCIL
R. A. Gordon (1960)
John Perry Miller (1958)
William C. Nicholls (1959)

AMERICAN COUNCIL OF LEARNED SOCIETIES
Frank H. Knight (1962)

INSTITUTE OF INTERNATIONAL EDUCATION
Theodore Morgan, *Chairman*
Rendigs T. Fels
Carter Goodrich
Michael Hoffman
D. Gale Johnson
Irving B. Kravis
Lorie Tarshis

INTERNATIONAL ECONOMIC ASSOCIATION REPRESENTATIVES
Howard S. Ellis (1961)
Gottfried Haberler (1961)

REPRESENTATIVE TO *UNESCO*
Calvin B. Hoover

COMMITTEE ON RESEARCH AND PUBLICATIONS
John Perry Miller, *Chairman* (1958)
Alexander Gerschenkron (1960)
R. A. Gordon (1960)
Arnold C. Harberger (1958)
Max F. Millikan (1959)
William C. Nicholls (1959)
Willard L. Thorp (1960)
James Washington Bell, Ex Officio

Representatives of the Association on Various Occasions

CONVOCATION CELEBRATING FIFTIETH ANNIVERSARY OF FOUNDING OF WILLIAM SMITH COLLEGE
Alfred E. Kahn

RURAL DEVELOPMENT PROGRAM CONFERENCE, MEMPHIS, TENNESSEE
William H. Nicholls

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE MEETING, APRIL 11 AND 12
Irving B. Kravis
Clair Wilcox

AGRICULTURAL ECONOMICS SOCIETY OF PAKISTAN, SECOND ANNUAL CONFERENCE, PAKISTAN
Joseph Motheral

SUSQUEHANNA UNIVERSITY CENTENNIAL SPRING CONVOCATION
Lyder K. Unstad
IOWA STATE COLLEGE CENTENNIAL
Gerhard Tintner
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
MARCH, 1958, MEETING
Simon Kuznets
Joseph J. Spengler
SECTION K, DECEMBER, 1958, MEETING
Edwin G. Nourse
LUNCHEON MEETING TO DISCUSS DESIRABILITY OF SETTING UP A CENTER FOR THE LEARNED SOCIETIES
Solomon Fabricant
AMERICAN COUNCIL OF LEARNED SOCIETIES MEETING
F. S. Deibler
INAUGURATION OF UNIVERSITY AND COLLEGE PRESIDENTS
Gorton Riethmiller, Olivet College
Joseph Gambardella
Clark Kerr, University of California
Bernard F. Haley
M. Norvel Young, Pepperdine College
Paul A. Dodd
Norman H. Topping, University of Southern California
Paul A. Dodd
Richard H. Heindel, Wagner Lutheran College
Carter Goodrich
Kaare R. Bergethon, Lafayette College
Raymond T. Bye
Charles E. Odegaard, University of Washington
Vernon A. Mund
Gilman Folsom, Rensselaer Polytechnic Institute
W. F. Spafford
Lloyd H. Elliott, University of Maine
Warren B. Catlin
Frank Anthony Rose, University of Alabama
R. M. Havens
William Joseph McDonald, University of America
Arthur E. Burns
Henry King Stanford, Birmingham Southern College
H. H. Chapman
David Marion Delo, University of Tampa
A. E. Nielsen
Rufus Patterson Perry, Johnson C. Smith University
Horace B. Davis
Stephen Junius Wright, Fisk University
George W. Stocking

Use of the Mailing List

Permission was granted to the following to use our mailing list to send the material indicated:

HOWARD ALLEN, INC.: To announce Kenneth E. Boulding's *The Skills of the Economist*

AMERICAN ASSEMBLY: *International Stability and Progress* and *Atoms for Power*

AMERICAN BANKERS ASSOCIATION: Condensed version of the Jesness report from *Banking*

AFL-CIO: Reprint from *Report of the AFL-CIO Executive Council to the Second AFL-CIO Convention*

AMERICAN INSTITUTE FOR ECONOMIC RESEARCH: Booklets, *Twentieth-Century Common Sense* and *The First Quarter and Plans for the Future*

AMERICAN STATISTICAL ASSOCIATION, Chicago Chapter: Announcements of a Midwest Conference

BROOKINGS INSTITUTION: To announce Lester V. Chandler's *Benjamin Strong, Central Banker, The Job of the Federal Executive,* and *Federal Budget and Fiscal Policy, 1789-1958*

UNIVERSITY OF CHICAGO, SPECIAL SERVICES TO BUSINESS AND INDUSTRY: To announce special courses and Conference on Automation, Operations Research, and Business Planning

UNIVERSITY OF CHICAGO PRESS: Special subscription offer for *The Journal of Political Economy*

COMMITTEE FOR ECONOMIC DEVELOPMENT: *The "Little" Economies, Check List of Free CED Materials to Educators, Problems of National Security, Commission on Money and Credit, Defense Against Inflation, Toward a Realistic Farm Program, Anti-Recession Policy for the Federal Government in 1958,* and address by Donald K. David, "Announcement of a National Commission on Money and Credit"

ECONOMETRIC INSTITUTE: To announce *Money, Men and Machines,* by Waddill Catchings and Charles F. Roos, and *Dynamics of Economic Growth: The American Economy, 1957-1975,* by Charles F. Roos

FORD FOUNDATION: To announce Regional Faculty Research Seminars for the summer of 1959

FORDHAM UNIVERSITY PRESS: To announce, *The Role of Government in Economic Development,* by Edward S. Mason

GENERAL ELECTRIC COMPANY: Annual Report

UNIVERSITY OF ILLINOIS, BUREAU OF ECONOMIC AND BUSINESS RESEARCH: To announce *Employers' Forecasts of Manpower Requirements: A Case Study,* by Robert Ferber, and *Experience Rating in Unemployment Compensation,* by Clinton Spivey

INDIANA UNIVERSITY, BUREAU OF BUSINESS RESEARCH: Leaflet on *Business Horizons* and other publications

INDUSTRIAL UNION DEPARTMENT, AFL-CIO: Pamphlet, *Labor, Big Business and Inflation*

INSTITUTE OF LIFE INSURANCE: The 1958 *Life Insurance Fact Book*
KELLEY & MILLMAN: Catalogue
LEWIS KLEID COMPANY: *Fortune* subscription offer
KRAUSE REPRINT CORPORATION: To announce reprint of *Economic History Review*
HUGH C. MACLEAN PUBLICATIONS: Information regarding *Decision* to Canadian members
MELDRUM AND FEWSMITH: Copy of Republic Steel Corporation advertisement from *Fortune*
UNIVERSITY OF MICHIGAN, BUREAU OF BUSINESS RESEARCH: Flier advertising *Rubber Developments in Latin America*, by D. M. Phelps
NATIONAL PLANNING ASSOCIATION: To announce *The Economy of the American People*
PRUDENTIAL INSURANCE COMPANY: Reprints of address by Carrol M. Shanks, "Can Government Spending Stabilize the Economy?"
TRANS WORLD AIRLINES: To circularize members in certain states

Respectfully submitted,

JAMES WASHINGTON BELL, *Secretary*

EXHIBIT I

Publication Costs

Year*	Papers and Proceedings: Number of Pages	Number of Copies	Cost	Handbooks: Number of Pages	Number of Copies	Cost
1930	222	4,300	$ 1,353.91			
1931	308	4,300	1,919.18	88	4,200	$ 589.54
1932	316	4,200	1,819.75			
1933	216	4,000	1,284.85	88	3,900	522.71
1934	232	3,700	1,192.91			
1935	248	4,000	1,347.88			
1936	360	4,200	2,037.90	58	4,100	454.36
1937	344	4,300	1,922.03			
1938	200	4,500	1,234.10	112	4,500	1,118.84†
1939	288	4,600	1,785.91			
1940	444	4,900	2,657.12	108	5,000	822.58
1941	479	5,200	3,294.45			
1942	548	5,400	3,909.79	208	5,500	1,775.72†
1943	535	5,500	3,652.56			
1944	470	5,800	3,350.40			
	144	5,900	1,215.22‡			
1945	536	6,400	4,502.84			
1946	960	6,700	8,149.90	143	6,900	2,035.71
1947	781	7,700	8,140.79			
1948	591	8,500	8,701.41	345	7,700	6,948.06†
1949	537	9,500	7,844.50			
1950	650	10,100	9,864.76	41	9,200	1,163.84†
1951	816	10,400	11,965.40	18	8,300	692.63†
1952	768	10,700	13,190.83	11	8,188	620.09†
1953	612	10,900	10,935.98	187	8,400	4,416.69
1954	765	11,000	13,932.96	11	7,900	660.06†
1955	711	11,000	12,900.41	8	8,000	540.21†
1956	651	11,200	12,115.97			
1957	754	12,400	16,253.84	548	10,100	15,815.33†
1958	677	12,700	15,471.98	32	9,300	1,434.01†

* This is the year of publication and pertains to the meeting of the preceding year. The figures are published in the subsequent year.

† "Who's who" volumes; 1950 and 1958—"Who's who" supplements; others—names and addresses supplement.

‡ Part of papers presented at annual meeting published as supplement to June number.

EXHIBIT II

Members and Subscribers

	Totals 11/30/57	Added	Removed	Gain or *Loss*	Totals 11/30/58
Class of membership:					
Annual	7,800	919*	471§	448	8,248
Junior	494	465†	347*	118	612
Family	133	13	15	*2*	131
Complimentary	67	19	4	15	82‡
Life	91	11	1	10	101
Honorary	15	—	—	—	15
Total Members	8,600	1,427	838	589	9,189
Subscribers	3,492	855	688	167	3,659
Totals	12,092	2,282	1,526	756	12,848

* Includes 168 junior members changed to annual.

† Includes 17 annual members changed to junior.

‡ Includes 22 who do not receive publications.

§ Resigned, 112; nonpayment, 226; died, 31; lack of address, 85; changed to junior member, 17.

REPORT OF THE TREASURER FOR THE YEAR ENDING NOVEMBER 30, 1958

The accompanying tables show the financial results for the past fiscal year compared with last year and with 1949. The year 1949 (following the publication of the *1948 Directory*) was selected so as to reflect a year comparable to last year, which followed the publication of the *1956 Handbook*. The first table shows comparative financial status and the second income and expenses, with budget figures for 1959.

Financial Operations. Income from all sources for 1958 totaled $106,259, down $2,854 from 1957, and net expenses, $100,824, showed a decrease of

COMPARATIVE FINANCIAL CONDITION FOR 1949, 1957, AND 1958

	11/30/49	11/30/57	11/30/58
Assets			
Cash on deposit and on hand	$ 7,456	$ 17,975	$ 15,151
Receivables (net)	3,422	6,688	6,459
Prepaid expenses and inventories	779	640	1,430
Furniture and fixtures (net)	675	4,521	3,746
Investments at cost:			
Bonds	33,109	75,370	75,370
Stocks	48,427	55,085	67,742
Total assets	$93,869	$160,279	$169,898
Liabilities and Funds			
Accounts payable	$ 6,080	$ 9,890	$ 10,673
Allied Social Science Associations	829	—	—
Deferred income	16,366	9,399	10,809
Membership extension fund	1,088	—	—
Fund for proposed secretariat	35	—	—
Carnegie Fund for International Travel	—	9,000	7,750
Ford Fund for index of economic journals	—	5,000	5,089
Ford Fund for register of economists	—	3,000	2,628
Fund for *American Economic Review* questionnaire	—	384	—
Fund for Committee on Research and Publications	—	491	491
Asia Foundation Fund	—	—	2,500
Sundry	—	47	71
Committee appropriations (not expended)	1,877	—	—
Life memberships	4,325	9,900	10,900
Total liabilities and funds	$30,600	$ 47,111	$ 50,911
Surplus			
Balance at beginning of period	$58,219	$122,936	$113,168
Transfers from life membership	100	—	200
Net income or loss for period	4,950	9,768*	5,619
Unappropriated surplus	$63,269	$113,168	$118,987
Total footings	$93,869	$160,279	$169,898

* Denotes red.

$17,257. Net operating income for 1958 was $5,435 compared with a loss of $8,968 in 1957. (After appropriation adjustments, the respective figures were $5,619 and $9,768.)

COMPARATIVE RESULTS OF OPERATIONS FOR 1949, 1957, AND 1958

	11/30/49	11/30/57	11/30/58	1959 Budget
Income				
Membership dues	$31,121	$ 49,383	$ 52,242	$ 54,000
Subscriptions	12,254	19,896	20,728	21,000
Sales	1,863	3,432	4,682	4,500
Advertising	7,775	13,236	13,724	14,500
Directory income (net)	1,410	—	—	—
Republications income	1,000	—	—	—
Sale of mailing list	—	—	—	5,000
Sundry income	—	134	294	300
Dues and publications income	$55,423	$ 86,081	$ 91,670	$ 99,300
Interest	$ 1,117	$ 1,770	$ 1,770	$ 1,770
Dividends	3,170	3,397	3,183	3,300
Less custodian fees	126*	231*	217*	250*
Sales of securities (net)	48	18,096	9,853	—
Investments (less fees)	$ 4,209	$ 23,032	$ 14,589	$ 4,820
Total income	$59,632	$109,113	$106,259	$104,120
Expenses				
Office salaries	$11,637	$ 31,581	$ 28,805	$ 30,000
Other administrative expenses	3,275	6,254	8,456	9,250
Addressing service income less expense	—	—	4,673*	—
Annual meeting	470*	1,713*	1,088*	—
Executive Committee	1,700	2,269	2,107	2,200
Other committee expenses	864	654	626	700
Administrative and operating expenses	$17,006	$ 39,045	$ 34,233	$ 42,150
Review printing	$20,165	$ 33,162	$ 33,795	$ 35,750
Papers and Proceedings printing	7,845	16,254	15,472	15,500
Directory printing	—	15,815	1,434	650
Editorial office (*Review*):				
Contributors	1,667	2,597	2,448	2,600
Editorial and clerical salaries	7,243	11,807	12,358	12,750
Other expenses (net)	756	599*	1,084	900
Publications	$37,676	$ 79,036	$ 66,591	$ 68,150
Total expenses	$54,682	$118,081	$100,824	$110,300
Net operating income or loss	$ 4,950	$ 8,968*	$ 5,435	$ 6,180*†
Appropriations	—	800*	184	—
Accrual liability for *Directory* or *Handbook*	—	—	—	4,000
Net income or deficit	$ 4,950	$ 9,768*	$ 5,619	$ 10,180*†

* Denotes red.

† As of March 27, 1959, due to unexpected revenues, it seemed probable that the size of the operating loss would be greatly reduced or that there might even be a net gain.

INVESTMENT PORTFOLIO

Year	At Par	Cost			Market
	Bonds	Bonds	Stocks	Total	Stocks and Bonds
1925	$25,000	$24,661.75		$ 24,661.75	
1930	31,000	32,439.48		32,439.48	
1933	33,500	32,962.48	$ 3,954.23	36,916.71	$ 31,522.50
1935	16,000	15,280.48	28,114.50	43,394.98	50,338.72
1940	25,000	22,519.80	41,155.95	63,675.75	60,553.88
1942	27,000	24,651.12	41,556.06	66,207.18	58,211.88
1945	40,000	36,705.95	44,955.81	81,661.76	103,574.76
1948	35,000	33,108.63	48,624.14	81,732.77	84,841.91
1950	35,000	33,108.63	51,978.53	85,087.16	104,177.27
1951	43,000	43,340.16	49,764.51	93,104.67	117,316.75
1952	42,000	42,312.67	58,934.00	101,246.67	130,836.02
1953	68,000	68,308.05	46,458.90	114,766.95	134,562.38
1954	61,000	61,518.63	38,082.20	99,600.83	132,280.63
1955	75,000	75,370.10	59,394.86	134,764.96	166,772.60
1956	75,000	75,370.10	60,237.30	135,607.40	168,337.25
1957	75,000	75,370.10	55,084.88	130,454.98	151,638.75
1958	75,000	75,370.10	67,741.71	143,111.81	175,609.00

RETURN ON INVESTMENTS

Year	Bonds	Stocks	Total	Rate of Return on Cost
1925	$1,350.00		$1,350.00*	
1930	1,695.21		1,695.21	5.22%
1933	1,679.49	$ 108.57	1,788.06	4.84
1935	1,022.96	680.70	1,703.66	3.92
1940	1,037.56	2,182.46	3,220.02	5.06
1942	1,306.49	2,186.17	3,492.66	5.28
1945	1,479.99	2,488.85	3,968.84	4.71
1948	1,194.85	2,944.31	4,139.16	5.06
1950	1,117.50	3,860.39	4,977.89	5.85
1951	1,026.30	4,607.67	5,633.97	6.05
1952	1,117.84	3,681.53	4,799.37	4.75
1953	1,435.12	3,587.45	5,022.59	4.36
1954	1,621.06	2,961.75	4,582.81	4.58
1955	1,750.16	3,002.50	4,752.66	3.53
1956	1,770.00	3,336.94	5,106.94	3.76
1957	1,770.00	3,397.05	5,167.05	3.90
1958	1,770.00	3,182.60	4,952.60	3.46

* Estimated income for year.

Income from dues and subscriptions of $3,691 (reflecting an increase of 756 in members and subscribers), together with small increases in sales and in advertising, contributed to the total, but the largest item was profit derived from sale of securities ($9,853).

Total expenses decreased by an amount somewhat less than was expected, with the expensive *1956 Handbook* out of the way, but the *1957 Supplement* was prepared and we were able to reduce office salaries only slightly. Other administrative costs (in which social security and annuity payments are in-

cluded) increased $2,200. Total expenses would have been even larger except for the fact that the annual meeting netted $1,088 and that we have been able to change a mailing expense to an income item (net $4,673) since the purchase of our addressing machine.

Budget Figures. The prospect of a balanced budget depends once again on what happens to our capital assets. On an operating basis, a deficit appears inevitable.

We expect an increase in members and subscribers. No membership campaign is contemplated, but we plan to continue processing current lists of economists, sending information booklets and application blanks to those whose position would seem to make them logical candidates for membership. Conspicuous examples of economists not members, including even some who participate in our annual programs, come as a surprise and cast doubt that heads of departments and others in administrative capacity are doing their duty in making known to their nonmember colleagues that it should be a professional responsibility to support an organization established and operated for their benefit. Solicitation of members and subscribers should not be the responsibility solely of the Secretary's Office.

A normal increase in dues and subscriptions, however, will not suffice to meet expenses. For the past eleven years, income from this source has paid for only about 80 per cent of the costs of publications and services of the Association. From 1944 to 1947, the proportion was about 90 per cent.

Sales of publications will probably remain stable. Advertising can be increased if our members will tolerate more advertisements in the *Review* and advertisements in the *Papers and Proceedings*. We can also increase net income for the use of our mailing list if objections to commercial use are overruled; but even with these items, we cannot meet the growing costs of doing business, including printing costs. Only in the years 1949, 1950, and 1951 has operating income from the sources mentioned (including net income from annual meetings—which should be self-supporting but not designed to make profit) covered all operating expenses. Had it not been for the income received from our investment holdings, we would have had deficits for twelve of the past fifteen years (1944-58) instead of three. The years 1947 and 1948, when the previous *Directory* was published, and 1957, when the *1956 Handbook* was issued, were deficit years, and if we take into account appropriations, we would have to add 1945 as well.

Projected figures for 1959 still show an operating deficit of $6,000 to $8,000, and if accrual accounting methods are used for the directory or handbook, the deficit figure will exceed $10,000. Budget figures must necessarily be considered rough and tentative, but under the most likely assumptions, our operating expenses will exceed operating income. Every means will be used in the Secretary's Office to increase income, but these will not be adequate to keep pace with rising costs and we will have to draw upon the financial backlog represented by surplus funds to balance the budget or indulge in deficit financing.

At its spring meeting, the Executive Committee was of the opinion that

with our present income, deficits are to be expected regularly. They therefore authorized the appointment of a committee to study the question of balancing the budget. The Committee on Association Deficit (S. E. Leland, Chairman) had several meetings, examined financial statements and records, and reviewed extensive tables and charts prepared in the Secretary's Office. A seven-point questionnaire was sent to the secretary-treasurers of the Allied Social Science Associations and to other constituent members of the SSRC, ACLS, AAUP, and AAAS and others, to find out if their experience would throw light on meeting the inflation pinch. After careful study, the Committee recommended: (1) changes in our accounting procedure with respect to the directory or handbook costs; (2) economies (decreased expenditures) in office management and possibly also in publication costs (e.g., reducing the size of the *Papers and Proceedings* or omitting publication altogether); (3) increasing income (e.g., by taking commercial advertisements, seeking a more favorable contract with the publishers of the "Readings Series," operating the annual meeting so as to make a profit, and more liberal use in the sale of our mailing list privileges); (4) the institution of more active membership drives; and (5) using reserves to meet emergency expenses by drawing upon surplus as long as present ratio of surplus to expenditures is maintained.

The explanation of our present financial condition is simple: we give more service to more people at fixed prices. We are able to do this because we draw upon profits from investments. We followed this policy because we wanted to keep our members and still permit them to join other associations serving their fields of specialization and to broaden our membership so as to include all economists—academic, government, and business—and to increase its influence through spreading its publications wherever they could be productively used. The situation is so similar to that of 1948 that we take the liberty to quote from a letter of November 4, 1948, to President J. A. Schumpeter:

> Last year I had hoped that we might be able to ride the tide of inflation with our $5.00 dues. It now seems clear that increasing costs have caught up with us and will continue to press ahead of income. Do you agree with me? We therefore face the alternatives of (1) curtailing operations or (2) increasing our income. I would regret to see curtailment of our activities which seem to have been productive. I see no other way of increasing income except to up our dues. . . . Certainly we cannot look for increased return on our investment account, nor can we long live on our accumulated surplus.
>
> Our dues have remained at the $5.00 level since 1913. Since that time we have experienced two major inflations. Only our growth in members and subscribers has enabled us to keep unit costs down. But now marginal costs and marginal revenues are getting close.
>
> Do you think it would be desirable for me to send a memorandum on a proposal to increase AEA dues to the members of the Executive Committee with a request that they be prepared to consider this item at the meeting in December? My proposal will be to increase active members' dues and subscribers' from $5.00 to $6.00 (some who believe that the demand is inelastic may suggest $8.00 or even $10.00), junior members', $3.00 to $4.00; and to decrease life membership rates from $200 to $100. The new schedule of rates could not be made effective for 1949, since billings for this year are already going out. The rates would have to apply for the first time to the year 1950.

With changes in figures and in dates, the same recommendation might be made today unless we adopt a policy with respect to the use of our unappropriated surplus which would enable us to continue to subsidize our members

and subscribers by keeping dues low while meeting increasing costs by living off our capital. We have been able to take substantial profits—nearly $80,000—in the past fifteen years while still maintaining and even increasing the capital value of our holdings; but it is not safe to count on this good fortune. If, for instance, exigencies should force us to pay Association officers at commercial rates and meet rent, light, and heat bills—now borne by university hosts—our comfortable financial backlog would soon disappear. It would seem to be prudent to consider long-range planning and to provide a financial basis which would enable the Association to continue service to the elements composing it. There is some disagreement in the diagnosis of the value of these services and consequently some difference of opinion with respect to the elasticity of demand for these services. Specifically, it has been suggested by the Committee on Association Deficit that the *Papers and Proceedings* be reduced in size or its publication suspended or that authors be billed for added publication costs where assigned space limits are exceeded. On the other hand, we learn from some sources that many of our members have stopped reading the *Review* because it has become too specialized. The directory or handbook classification of our membership divides economics into fifteen groups and some forty-five subgroups. Are we to curtail or abandon service to major segments? Perhaps we know too little about the facts in order to make a rational judgment. This prompts a specific proposal that we give regular members a choice of continuing to pay $6.00 dues to receive either the *American Economic Review* or the *Papers and Proceedings* or $8.00 dues for both (with no change in junior membership dues or subscription rates). Certain changes would be made in the *Papers and Proceedings;* e.g., include the presidential address, since this is usually an integral part of the annual program. This proposal would be a compromise solution to a complex problem. If it were thought too risky to proceed on this basis, we might consider a straw ballot, taken without commitment, as a guide to our conduct. This ballot could be taken at the next election, in November, 1959.

Financial Condition. The most significant change occurring in the assets during the past year is the increase in investment holdings of stock ($67,742 in 1958 compared to $55,085 in 1957). The increase of $12,657 represents profits taken on the sale of securities and plowed back. Increased inventories reflect the need for larger supplies. Cash on hand comes mostly from funds listed under liabilities and this item continues to be large.

On the liability side, figures for accounts payable and deferred income are usually large at this time of year and figures for Funds represents amounts allocated for special purposes. Ten new life memberships have been added to account for $1,000 increase.

Contingent liabilities not definite enough to warrant putting on the balance sheet should be mentioned: (1) a joint liability with the Royal Economic Society of $600, underwriting the sale of the UNESCO book, *University Teaching in the Social Sciences: Economics;* (2) $6,500 for printing a cumulative index (Executive Committee Minutes, April 4-5, 1958); (3) $2,500 for "negotiating the underwriting" of Jaffe's life and works of Walras (Executive Committee Minutes, December 27 and 29, 1957).

Unappropriated surplus is increased by the amount of this year's net income of $5,619, plus $200 transferred from life memberships. In amount, from $113,168 to $118,987. Total footings amount to $169,898.

Values of stocks and bonds at par, cost, and market, together with the rate of return, are shown for selected years in the accompanying table. The list of our holdings, together with changes made during the year, is found in the report of the Finance Committee.

Respectfully submitted,

JAMES WASHINGTON BELL, *Treasurer*

REPORT OF THE FINANCE COMMITTEE

December 8, 1958

Executive Committee
American Economic Association
Evanston, Illinois

GENTLEMEN:

The list of the Association's investment holdings as of the end of the fiscal year November 30, 1958, and changes made since the last report are shown in the accompanying tables. Cost prices and approximate market values are

LIST OF SECURITIES HELD BY THE ASSOCIATION
Stocks

Number of Shares of Stock	Issue	Cost	Approximate Market Value 11/29/58
100	Abbott Laboratories	$ 6,132.59	$ 6,900
100	American Trust Co. (San Francisco)	4,261.13	5,000
200	Central and South West Corp.	2,801.69	11,200
100	Chain Belt Co.	6,620.58	6,800
100	Columbia Broadcasting System	2,682.20	3,800
100	Fansteel Metallurgical Corp.	4,680.04	4,800
62.4	Gulf Oil Corp.	1,390.48	7,426
131	Houston Lighting and Power Co.	1,624.53	9,039
50	Inland Steel Co.	3,633.62	6,400
100	International Nickel Co. of Canada	7,821.78	8,700
206	Monsanto Chemical Co.	7,755.83	8,034
110	Peoples Gas Light and Coke Co.	3,562.04	5,390
200	Pepsi-Cola Co.	4,962.50	5,000
150	Socony Mobil Oil Co.	3,882.25	7,200
50	Zenith Radio Corp.	5,930.45	7,400
		$ 67,741.71	$103,089

Bonds

Par Amount	Issue	Cost	Approximate Market Value 11/29/58
$20,000	U.S. Treasury Notes, $1\frac{7}{8}$%, Series "A-1959," due 2/15/59	$ 20,003.00	$ 20,000
5,000	U.S. Treasury Bonds, $2\frac{3}{4}$%, due 11/15/61	5,000.00	4,850
8,000	U.S. Treasury Bonds, $2\frac{3}{4}$%, Series "B"	8,000.00	7,440
7,000	U.S. Treasury Bonds, $2\frac{1}{2}$%, due 12/15/72–67	7,275.63	6,230
15,000	U.S. Treasury Bonds, $2\frac{1}{2}$%, due 12/15/58	15,000.00	15,000
20,000	U.S. Treasury Bonds, $2\frac{1}{2}$%, due 8/15/63	20,091.47	19,000
	Bonds	$ 75,370.10	$ 72,520
	Stocks	67,741.71	103,089
	Total	$143,111.81	$175,609

SUMMARY OF SECURITIES PURCHASED AND SOLD
YEAR ENDED NOVEMBER 30, 1958

Issue	Shares	Cost	Selling Price	Gain or Loss
Sales:				
Columbia Broadcasting System	114.24	$ 3,074.30	$ 3,800.73	$ 726.43
Eastern Airline Company	104.04	2,774.10	3,624.06	849.96
First National Bank of Chicago	10	3,070.00	3,574.40	504.40
Gulf Interstate Gas Company	300	6,240.00	6,060.90	179.10*
Gulf Oil Company	55.5	1,383.31	6,382.62	4,999.31
Monsanto Chemical Company	.08	2.77	2.77	—
Peoples Gas Light and Coke Co.	164	5,159.51	7,472.14	2,312.63
Pure Oil Company	100	4,361.98	3,861.12	500.86*
Sperry-Rand Corporation	220	4,608.66	3,977.75	630.91*
Inland Steel Company	50	3,633.61	5,404.44	1,770.83
		$34,308.24	$44,160.93	$9,852.69
Purchases:				
Abbott Laboratories	100	$ 6,132.59		
Chain Belt Company	100	6,620.58		
Fansteel Metallurgical Corp.	100	4,680.04		
International Nickel Company of Canada, Ltd.	100	7,821.78		
Inland Steel Company	100	7,267.23		
Monsanto Chemical Company	100	3,134.50		
Peoples Gas Light and Coke Co.	10	415.40		
Pepsi-Cola Company	200	4,962.50		
Zenith Radio Corporation	50	5,930.45		
		$46,965.07		

* Denotes red.

given. Included, also, is a classification of inventory: fixed-income securities and common stocks (the latter classified by industry). The proportion of stock and bond holdings on cost and market bases has continued at substantially the same level for the past four years: a slight excess of bonds on a cost basis and a larger proportion of stocks to total on the market basis, the ratio being held where it is by the periodic liquidation of stocks.

The Committee has had several formal meetings and its members are always available for consultation by phone. We have given much attention to changes in the investment market, money rates, fiscal and monetary policies of the government, and general business conditions. It will be noted that no changes were made in the list of bond holdings, though we did take the shorter option of roll-over privileges in covering $15,000 United States Treasury bonds, 2.5 per cent, due December 15, 1958, into 11½-month certificates yielding 3.43 per cent. Other shifts were made in stock holdings, chiefly to take advantage of profit situations in the case of several stocks showing high market appreciation and with the proceeds shifting into other stocks of promise.

It is with great sorrow that we report the loss of Roy C. Osgood, who served as Chairman of this Committee from 1938 until his death in July, 1958. His fellow committee members and his many other friends in the Association

INVENTORY AND APPRAISAL OF SECURITIES
AS OF NOVEMBER 29, 1958

	Par or Shares	Market Price	Market Value	% of Value	Cost
FIXED-INCOME SECURITIES					
CASH EQUIVALENT					
Governments					
U.S. Treas. 2½s 12/15/58	$15,000	100	$15,000		$15,000
U.S. Treas. 1⅞s 2/15/59	20,000	100	20,000		20,003
U.S. Treas. 2½s 11/15/61	5,000	97	4,850		5,000
Total cash equivalent			$39,850	22.7	
BONDS					
Governments					
U.S. Treas. 1½s 8/15/63	20,000	95	$19,000		20,091
U.S. Treas. 2½s 12/15/72–67	7,000	89	6,230		7,276
U.S. Treas. 2¾s 4/1/80–75	8,000	93	7,440		8,000
Total bonds			$32,670	18.6	
Total fixed-income securities			$72,520	41.3	
COMMON STOCKS					
UTILITIES					
Central and South West	200	56	$11,200		2,802
Houston Lighting and Power	131	69	9,039		1,625
Peoples Gas Light and Coke Co.	110	49	5,390		3,562
			$25,629	24.9	
FINANCIAL					
American Trust of San Francisco	100	50	$5,000	4.9	4,261
FOODS AND CONTAINERS					
Pepsi-Cola	200	25	5,000	4.9	4,963
MACHINERY AND CONSTRUCTION					
Chain Belt Co.	100	68	6,800	6.7	6,621
METALS AND MINING					
Fansteel Metallurgical Corp.	100	48	4,800		4,680
Inland Steel	50	128	6,400		3,634
International Nickel Co.	100	87	8,700		7,822
			$19,900	19.4	
OIL AND GAS					
Gulf Oil Corp.	62.4	119	7,426		1,390
Socony Mobil	150	48	7,200		3,882
			$14,626	13.9	
CHEMICALS AND DRUGS					
Abbott Laboratories	100	69	6,900		6,133
Monsanto Chemical	206	39	8,034		7,756
			$14,934	14.5	
ELECTRICAL PRODUCTS					
Zenith Radio	50	148	7,400	7.2	5,930
MISCELLANEOUS					
Columbia Broadcasting System	100	38	3,800	3.7	2,682
Total common stocks			$102,803	58.7	
Total securities			$175,609	100.0	

will long remember his great integrity and judgment. Professor Corliss D. Anderson, of the Graduate School of Business of Northwestern University, had been appointed a fourth member of the Committee ad interim and his membership was confirmed at the December meeting.

Respectfully submitted,

C. WELLS FARNHAM, *Chairman*
CORLISS D. ANDERSON
JAMES WASHINGTON BELL

REPORT OF THE AUDITOR

December 16, 1958

Executive Committee
American Economic Association
Evanston, Illinois

DEAR SIRS:

In accordance with instructions we have examined the accounts and related records of the American Economic Association for the year ended November 30, 1958, and now submit our report thereon together with the following exhibits:

Statement of Financial Position—November 30, 1958	Exhibit 1
Statement of Income and Expense for Year Ended November 30, 1958	Exhibit 2

Results from Operations

Net income for the year ended November 30, 1958, was $5,619 compared with loss of $9,768 for the year ended November 30, 1957, as shown in the following summary:

Particulars	Year Ended November 30 1957	1958	Increase Decrease*
Income:			
Dues	$ 49,383	$ 52,242	$ 2,859
Interest and dividends (net)	4,936	4,736	200*
Profit on sale of securities (net)	18,096	9,852	8,244*
Miscellaneous income	134	294	160
Total income	$ 72,549	$ 67,124	$ 5,425*
Expense:			
Publication expense	$ 79,036	$ 66,590	$ 12,446*
Less—Publication income	36,564	39,134	2,570
Net publication expense	$ 42,472	$ 27,456	$ 15,016*
Administrative and other operating expenses	39,045	34,233	4,812*
Appropriations	800	184*	984*
Total expense	$ 82,317	$ 61,505	$ 20,812*
Net income or loss*	$ 9,768*	$ 5,619	$ 15,387

* Denotes red.

The $2,859 increase in dues reflects the increase in membership as reported by the secretary:

Classification	Number of Members at November 30 1957	1958
Regular	7,800	8,248
Junior	494	612
Family	133	131
Life	91	101
Honorary	15	15
Complimentary	67	82
Total	8,600	9,189

Interest on bonds owned was accounted for in accordance with stated rates; dividends received on stocks were compared with amounts reported in published records of dividends paid.

Net publication expense, as shown in the following summary, amounted to $27,456 for the current year compared with $42,472 for the preceding year:

Particulars	Year Ended November 30 1957	1958	Budgetary Estimates for Year 1958
Expenses:			
Printing of—			
Review	$ 33,162	$ 33,795	$ 34,400
Directory and *Handbook*	15,815	1,434	—
Proceedings	16,254	15,472	—
Editor's honorarium	4,500	4,500	4,500
Payments to contributors	2,597	2,447	2,600
Editorial clerical salaries	7,307	7,858	7,800
Editorial supplies and expense	778	1,084	700
Sundry publication income less expense	1,377*	—	
Total expenses	$ 79,036	$ 66,590	
Less—Income:			
Subscriptions, other than members	$ 19,896	$ 20,728	
Sales of Copies	3,432	4,682	
Advertising	13,236	13,724	
Total income	$ 36,564	$ 39,134	
Net publication expense	$ 42,472	$ 27,456	

* Denotes red

The decrease of $15,016 in net publication expense was due mainly to the $14,381 decrease in cost of printing for the *Directory* and *Handbook*.

Sundry publication income less expense in 1957 represents addressing service formerly performed by the printer from the Association's mailing lists. This service is now furnished by the Secretary's office and the results from this operation are shown under administrative expenses for 1958.

Billings for the December, 1958, issue of the *Review* and reprints had not been made by the publishers at the time of our examination. The publishers estimate the cost of the *Review* printings and reprints at $9,600; this amount is included in the year's expenses.

Financial Position

Financial position of the Association at November 30, 1957, and 1958 is set forth in the following summary:

	November 30 1957	1958	Increase Decrease*
Assets			
Cash on deposit and on hand	$ 17,975	$ 15,151	$ 2,824*
Receivables (net)	6,688	6,459	229*
Prepaid expenses	640	1,430	790
Equipment, furniture and fixtures	4,521	3,746	775*
Investments at cost—			
Bonds	75,370	75,370	—
Stocks	55,085	67,742	12,657
	$160,279	$169,898	$ 9,619
Liabilities, Funds and Surplus			
Accounts payable	$ 9,890	$ 10,673	$ 783
Deferred income	9,399	10,809	1,410
Fund for travel expenses of delegates to international meetings	9,000	7,750	1,250*
Fund for preparation of a cumulative index of economic journals	5,000	5,089	89
Fund for preparation of a special register of economists	3,000	2,628	372*
Fund for Committee on Publication and Research	491	491	—
American Economic Review Questionnaire Fund	383	—	383*
Asiatic Foundation	—	2,500	2,500
Sundry fund	48	71	23
Life memberships	9,900	10,900	1,000
Surplus—			
Balance at beginning of year	122,936	113,168	9,768*
Net income or loss* for year	9,768*	5,619	15,387
Life memberships transferred to surplus	—	200	200
	$160,279	$169,898	$ 9,619

* Denotes red.

Cash on deposit was satisfactorily reconciled with balances confirmed directly to us by the depositories.

The receivables of the Association were not confirmed by correspondence with debtors. Based upon the Association's past experience the reserve for doubtful accounts appears to be adequate to cover normal losses.

Changes in the investment account were verified by the examination of broker's invoices and other supporting data. Securities held at November 30, 1958, were confirmed directly to us by the State Bank and Trust Company of Evanston, Illinois, custodian for the Association.

Insofar as we are able to ascertain, all liabilities of the Association at November 30, 1958, are reflected in the accompanying statement of financial position, and the Secretary has represented to us that to the best of his knowledge all liabilities are disclosed.

The receipts and expenditures during the year for the various funds and grants are indicated in the following table:

Fund	Balance 11/30/57	Received	Expended	Balance 11/30/58
Travel expense of delegates to international meetings	$9,000	$	$ 1,250	$7,750
Preparation of cumulative index of economic journals	5,000	20,000	19,911	5,089
Preparation of special register of economists	3,000		372	2,628
Asiatic Foundation	—	2,500		2,500
Committee on Publications and Research	491			491
American Economic Review questionnaire	383		199*	—
Sundry	47	58	34	71

* Unexpended balance of $184 returned to unappropriated surplus.

We express our appreciation for the courtesies and co-operation extended to our representatives during the course of the examination.

Very truly yours,

DAVID HIMMELBLAU & CO.
Certified Public Accountants

EXHIBIT 1

American Economic Association
Statement of Financial Position—November 30, 1958

Assets

Current Assets:		
Cash on deposit and on hand—		
State Bank and Trust Company, Evanston	$ 4,951.40	
National Bank of Commerce of Chicago	10,149.11	
Petty cash	50.00	$ 15,150.51
Receivables—		
Review advertising	$ 4,136.75	
Accrued interest	549.76	
Publication sales, etc.	1,539.30	
Membership dues	570.75	
	$ 6,796.56	
Less—Reserve for doubtful accounts	337.14	6,459.42
Inventory of stamps and envelopes		1,018.78
Unexpired insurance		411.12
Total current assets		$ 23,039.83
Investments (at cost):		
Bonds	$75,370.10	
Stocks	67,741.71	143,111.81
Equipment, Furniture and Fixtures (less accumulated depreciation)		3,746.34
		$169,897.98

Liabilities, Funds and Surplus

Current Liabilities:			
Accounts payable			$ 10,673.42
Deferred Income:			
Prepaid subscriptions		$ 8,190.91	
Prepaid dues		2,618.28	10,809.19
Funds:			
Carnegie Corporation of New York grant for travel expenses of delegates to international meetings		$ 7,749.50	
The Ford Foundation grants—			
Preparation of a cumulative index of economic journals	$ 5,088.83		
Preparation of a special register of economists	2,627.76	7,716.59	
Committee on Publication and Research		490.68	
Asiatic Foundation		2,500.00	
Sundry		71.25	18,528.02
Life Memberships and Surplus:			
Life memberships		$ 10,900.00	
Unappropriated surplus—			
Balance November 30, 1957	$113,168.03		
Net income for year ended November 30, 1958 (Exhibit 2)	5,619.32		
Life memberships transferred to surplus	200.00	118,987.35	129,887.35
			$169,897.98

See Auditor's Opinion, page 637.

EXHIBIT 2

American Economic Association
Statement of Income and Expense for the Year Ended November 30, 1958

Particulars			Amount	
Income:				
Dues—				
Regular, junior and family members			$49,129.21	
Subscribing and contributing members			3,112.50	$52,241.71
Investments—				
Interest on bonds			$ 1,770.00	
Dividends			3,182.60	
			$ 4,952.60	
Less—Custodian fees			216.63	4,735.97
Gain on sale of securities				9,852.69
Miscellaneous income				294.00
Total income				$67,124.37
Expense:				
Administration and other expense—				
Secretary's salary		$ 4,500.00		
Office salaries		24,305.31		
Addressing service income less expense		4,673.10*		
Stationery and printing		1,704.34		
Postage		1,097.35		
Executive committee expense		2,107.11		
Other committee expense		626.38		
Annual meeting (net)		1,088.18*		
Republication expense		500.00		
Annuity payments		926.78		
Social Security taxes		974.49		
Provision for depreciation		849.66		
Telephone and telegraph		352.69		
International Economic Association		400.00		
American Council of Learned Societies		200.00		
Insurance		169.91		
Office supplies		365.50		
Miscellaneous expense (net)		914.83	$34,233.07	
Publication expense—				
Printing of—				
Review		$33,794.93		
Proceedings		15,471.98		
Directory and *Handbook*		1,434.01		
Editorial honorarium		4,500.00		
Payments to contributors		2,447.50		
Editorial clerical salaries		7,858.47		
Editorial supplies and expense		1,083.91		
		$66,590.80		
Less—Publication income:				
Subscriptions other than members	$20,727.72			
Sales of copies	4,682.44			
Advertising	13,724.25	39,134.41	27,456.39	61,689.46
				$ 5,434.91
Add Unexpended Appropriations:				
Unused appropriation for *American Economic Review* questionnaire				184.41
Net income for year (Exhibit 1)				$ 5,619.32

* Denotes red.

AUDITORS' OPINION

Executive Committee
American Economic Association:

In our opinion, the accompanying financial statements present fairly the financial position of the American Economic Association at November 30, 1958 and the results of its operations for the year ended that date, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Our examination was made in accordance with generally accepted auditing standards and included such tests of the accounting records and other auditing procedures as we considered necessary in the circumstances.

Chicago, Illinois
December 16, 1958

DAVID HIMMELBLAU & CO.
Certified Public Accountants

REPORT OF THE MANAGING EDITOR FOR THE YEAR ENDING DECEMBER 1958

The number of manuscripts received during 1958 and the percentage of articles accepted have been about the same as in the preceding five years. Table 1 gives the comparative figures.

TABLE 1

MANUSCRIPTS SUBMITTED 1953–58

	1958	1957	1956	1955	1954	1953
Manuscripts received	242	215	242	245	231	234
Articles	151	141	153	149	160	122
Communications	91	74	89	96	71	112
Percentage of articles accepted	17	19	18	17	18	15

Table 2 provides the breakdown of the volume's contents as between articles, review articles, communications, book reviews, etc. We have continued to devote more space to book reviews than used to be customary—both because of the steadily increasing flow of new books in economics and in order to offer somewhat more adequate coverage of the more important foreign books.

TABLE 2

SUMMARY OF CONTENTS, 1956–58

	1958		1957		1956	
	Number	Pages	Number	Pages	Number	Pages
Leading articles	22	428	22	429	21	425
Review articles	4	50	5	68	7	86
Communications:						
Original	6	30	7	55	6	16
Comments and replies	12	79	6	32	14	51
Book reviews	181	327	192	344	178	311
Classified lists:						
New books	—	63	—	61	—	57
Periodical articles	—	63	—	66	—	65
Dissertations	—	32	—	28	—	30
Notes	—	47	—	50	—	45
		1,119*		1,133*		1,086*

* Plus some blank pages.

Particular attention has been given during the past year to ways and means of obtaining reviews of at least the most important economics treatises of Soviet Russia and some of the East European socialist countries. It has proved to be impossible to obtain review copies from publishing institutions. I have however been successful in enlisting the aid of about twelve U.S. specialists in the economics of these countries who have agreed to watch for important books and to prepare reviews of those to which they are able to obtain access. Some reviews have already resulted from these efforts and I am confident that more will follow. This program will require, however, a further modest expansion in the book review section.

Table 3 summarizes the subject-matter distribution of articles, review articles, and communications for the past five years, also showing in parentheses the 1958 distribution. The most interesting distribution is that of leading articles plus original communications, since to some extent these figures indicate the areas in which the most work of publishable quality and of broad interest to economists is being done. The six fields showing the highest concentration for the five years are as follows: Income and Employment Theory (24), International Economics (21), Public Finance (14), Economic Development (13), Labor Economics (12), and Price and Allocation Theory (11). This is, after all, about what one would expect.

The program of survey articles to be financed by a grant of $13,000 by the Rockefeller Foundation is under way. The Board of Editors, at its annual meeting last December, drew up a tentative list of subjects for eight articles

TABLE 3

SUBJECT-MATTER DISTRIBUTION: ARTICLES AND COMMUNICATIONS, 1954–58 AND 1958

	Articles	Review Articles	Original Communications	Comments; Replies	Totals
General economics	6 (2)	2 (1)	2	—	10 (3)
Price theory	9 (3)	3	2	5	19 (3)
Income theory	17 (2)	5 (1)	7 (2)	11 (3)	40 (8)
History of economic thought	3 (1)	2	1 (1)	—	6 (2)
Economic development	13 (1)	2	—	5 (3)	20 (4)
Social accounting	1	2	1	—	4
Economic systems	3 (1)	2	—	—	5 (1)
Business fluctuations	2 (2)	—	2	3	7 (2)
Money and banking	4	2	3 (2)	2 (2)	11 (4)
Public finance	10 (1)	—	4 (1)	7 (2)	21 (4)
International economics	19 (2)	2 (2)	2	4	27 (4)
Business finance	2 (2)	—	—	—	2 (2)
Business organization	2	—	—	—	2
Industrial organization	6 (3)	2	3	—	11 (3)
Land economics	6 (1)	—	—	2	8 (1)
Labor economics	10 (1)	—	2	9 (2)	21 (3)
Population; welfare	—	1	—	2	3
Unclassified	—	—	2	3	5
	113 (22)	25 (4)	31 (6)	53 (12)	222 (44)

Note: The 1954–58 figure is followed in each case by the 1958 figure in parentheses.

to be published in the *Review* over the next four years. Two of the topics have already been assigned; and the first article should appear in an early issue of 1959. A committee of the Royal Economic Society has also prepared a tentative list of the survey articles to be published in the *Economic Journal* with the aid of a similar grant from the same Foundation; and our Board of Editors is now in a position to make more definite plans with regard to our program.

Table 4 presents the actual expenditures in 1958 for the four regular issues in comparison with the estimated budget and with actual expenditures in 1957. Actual expenditures were about equal to the expenditures budgeted. Printing and mailing costs have continued to increase—partly because of the increase in the number of copies printed, and partly because of the recent increase in postage rates.

TABLE 4

ACTUAL AND BUDGETED EXPENDITURES

	Budget 1958	Actual 1958	Actual 1957
Printing and mailing	$34,400	$34,238.92*	$32,918.18†
Editor's salary	4,500	4,500.00	4,500.00
Editorial assistance	7,800	8,082.13	7,412.66
Supplies	700	700.88	618.06
Contributors	2,600	2,448.00	2,597.00
	$50,000	$49,969.93	$48,045.90

* Cost of December number estimated.
† Corrected from 1957 Annual Report.

Table 5 gives detailed information about printing costs by quarters. The number of copies printed in 1957 was 12,400 per issue; in 1956 it averaged 11,550.

TABLE 5

COPIES PRINTED, SIZE AND COST OF PRINTING, 1958

	Copies Printed	Pages		Issue	Reprints	Cost Including Reprints
		Net	Gross			
March	12,700	259	316	$ 8,039.30	$ 82.82	$ 8,122.12
June	12,700	287	328	8,115.67	97.02	8,212.69
September	13,000	288	328	8,412.48	91.63	8,504.11
December	13,500	289	360	9,594.88	83.21	9,678.09
		1,123	1,332	$34,162.33	$354.68	$34,517.01

The estimated costs for the coming year are presented in Table 6, based on a volume of 1,370 pages, including advertising (or about 1,140 pages of text)

and an average number of copies of 14,000. The modest increase in the number of pages of text is to permit the slight expansion of the book-review section referred to above. The item Supplies includes $200 for new equipment authorized at the last meeting of the Executive Committee but which has not yet been acquired.

TABLE 6

RECOMMENDED BUDGET FOR 1959

Printing (including paper, postage, reprints, etc.)	$35,750
Editor's salary	4,500
Editorial assistance	8,250
Supplies	900
Contributors	2,600
	$52,000

During the year, I have had the advice and assistance of the following foreign correspondents—who have been particularly helpful with regard to the selection of foreign books for listing and review:

Isaac Kerstenetzky (Brazil)
Jean-Marcel Jeanneney (France)
Erich Schneider (Germany)
Victor L. Urquidi (Mexico)
P. J. Verdoorn (Netherlands)
Erik Lindahl (Sweden)
Paolo Sylos Labini (Italy)

Three members of the Board of Editors complete their three-year terms of office at this time: G. L. Bach, C. P. Kindleberger, and Walter Salant. I wish to express my appreciation of the exceedingly generous expenditure of time they have willingly made in the interests of the *Review* and the Association. I nominate for three-year terms beginning in 1959: Rendigs Fels, A. C. Harberger, and W. F. Stolper.

During the year I have frequently sought the aid of members of the profession in addition to the members of the Editorial Board—partly to relieve the latter of what would otherwise be an impossibly heavy burden and partly to obtain advice of specialists in particular areas not represented on the Board. The following have assisted in this way:

M. Abramovitz
A. Alchian
S. S. Alexander
W. J. Baumol
C. Christ
R. Eisner
M. Friedman
A. Gerschenkron
R. Goode
R. A. Gordon
J. G. Gurley
M. Hastay
R. B. Heflebower
W. Hochwald
S. S. Hoos
H. S. Houthakker
W. O. Jones
N. Kaplan
C. Kaysen
J. P. Lewis
J. Lintner
F. Machlup
H. Markowitz
R. A. Musgrave
R. P. Powell
L. Reynolds
T. Scitovsky
E. S. Shaw
W. L. Smith
R. Solow
J. J. Spengler
G. J. Stigler
A. Sweezy
B. Swerling
G. Tintner
L. Ulman
C. Wilcox
H. F. Williamson
Y. L. Wu

Respectfully submitted,

B. F. HALEY, *Managing Editor*

REPORT OF THE COMMITTEE ON RESEARCH AND PUBLICATIONS

A volume of *Readings in Industrial Organization and Public Policy*, by Richard B. Heflebower and George W. Stocking, was published in the fall of 1958; a volume of *Readings in the Economics of Taxation*, by Carl S. Shoup and Richard A. Musgrave, is scheduled for publication in 1959. It is hoped that a volume of *Readings on Economic Development*, by Max Millikan and Henry J. Bruton, will go to press during 1959. The Committee is considering proposals for other volumes of readings.

During the year the Committee considered a suggestion that the Association develop a program for promoting knowledge of foreign economic research by American and other English-speaking scholars. It decided the suggestion merited careful consideration and recommended the establishment of a special *ad hoc* committee to review a series of related problems. The report of that committee is included elsewhere in these "Proceedings."

JOHN PERRY MILLER, *Chairman*

REPORT OF THE CUMULATIVE INDEX ADVISORY COMMITTEE

The project is to prepare a several-volume index to articles in economic journals in the English language. The index will have both classified and author sections. We have proceeded to the point where most of the detailed decisions concerning the classification system and the author section have been settled. Moreover, more than half of the volumes which we had originally thought of including have been classified.

Originally, the project comprised thirty-five of the more important journals, including one journal each from Canada, South Africa, and Australia. But as the work progressed, the Committee concluded that it would be desirable to add nineteen other journals. In addition it proposed the addition of articles in English in thirteen European journals. Finally, the Committee noted a rapid increase in English-language journals published in Asia and some other less developed areas. The Committee believes that there are good reasons for including these journals in order to provide more nearly complete coverage of English-language journals. Moreover, since many of these journals are not yet easily accessible to Americans, the index would call scholars' attention to research of which they might not otherwise be aware. Finally, it seems wise in the interest of international understanding to include them.

The Committee hopes that it will be possible to price the index so as to encourage widespread purchase by individuals. The Committee received permission of the Executive Committee to seek further funds which would make possible classification of additional journals as indicated above and a price policy which it has in mind.

J. P. Miller, *Chairman*
Robert Bishop
Earl J. Hamilton
Fritz Machlup
Joseph J. Spengler

REPORT OF COMMITTEE ON PROMOTION OF KNOWLEDGE OF FOREIGN ECONOMIC RESEARCH

1. *Background and Purpose.* The Committee was established by the President of the American Economic Association upon authorization by the Executive Committee at its meeting in April, 1958. The establishment of the Committee had been recommended by the Committee on Research and Publications as a result of discussions between representatives of the Ford Foundation, the Editor of the *American Economic Review*, and the Chairman of the Committee on Research and Publications.

The Committee was instructed to consider the following questions: (1) Is it important from the point of view of intellectual progress in English-speaking countries and international relations to undertake a program designed to increase the familiarity of English-speaking economists with economic research and thinking in foreign countries? (2) What is now being done to promote such understanding and what remains to be done? (3) If more remains to be done, what are the most effective ways of doing it: through review articles, translations, international conferences, or other ways? (4) Who are appropriate experts to undertake such projects as may seem desirable?

Members of the Committee are: John Perry Miller, Chairman; Abram Bergson, Hans J. Brems, Martin Bronfenbrenner,[1] Kermit Gordon, Gottfried Haberler, George Hildebrand, Albert O. Hirschman, P. S. N. Prasad,[1] Robert S. Smith, and Gerald Sirkin, Secretary

2. *General Conclusions.* The Committee discussed the adequacy of international communication of the results of economic discussion and research and the various agencies now engaged in promoting such work. It was the consensus that through such agencies as the International Economic Association, the Conference on Income and Wealth, and the United Nations much is already being done to promote communication among economists internationally. It was agreed that in the fields of economic theory and econometrics there is good communication and that there are probably relatively few important contributions which do not eventually become available to English-speaking economists. Likewise, in the field of income and wealth, statistical methods, population, and international trade, communication is also well developed. The Committee believes, however, that even in some of these areas an expansion of present translation programs would be desirable. In other areas where research and thinking are more closely related to the institutional and cultural environment of particular countries, the Committee believes that international communication is less well developed. This is true of work in labor, industrial organization, banking, and, to a lesser degree, public finance. In these areas the international movement of economists and research is less

[1] These members were unable to attend the meeting of the Committee.

well organized. This is particularly true of empirical research and discussion of alternative public policies. The Committee believes, therefore, that there is a place for undertaking a series of survey articles on current economic research and thinking in various foreign countries. The Committee's attention was drawn also to the inadequacy of training and research of scholars in the Russian-Chinese area. The recommendations of the Comittee concerning steps to be taken in these various areas are presented below.

3. *Surveys of Economic Research in Foreign Countries.* The Committee recognized that there is a significant language barrier which limits the American economist's knowledge of valuable economic research and discussion going on in many parts of the world, such as Scandinavia, Germany, Italy, Latin America, the Iron Curtain countries and some Asian countries. But the nature and volume of much of the research and discussion would not justify translation. The Committee considered and rejected several proposals for breaching this barrier, including an index of articles appearing in foreign languages and the publication of abstracts of such articles. It was felt that the index would not serve the needs of the linguistically crippled. Past experience with economic abstracts indicates that the preparation of meaningful abstracts of articles on economics presents almost insuperable problems. It was concluded that what would most interest and benefit English-speaking economists would be surveys reporting on and analyzing the economic research being carried on in those areas and the issues and topics being debated and the positions being taken—what was referred to as the "climate of economic opinion."

Survey articles would contribute to the dissemination of information about foreign economics in ways that a translation program alone could not. First, the substance of government reports and research studies of international economic commissions which would not be worth translating in full could be communicated. Second, where the interpretation of foreign material requires the services of skilled specialists, as in the case of data from the Soviet bloc, surveys offer distinct advantages over mere translating. Third, surveys offer the only approach to the climate of opinion in areas where publication is meager and affords little insight. The Committee believes that in some cases a survey of economic research and discussion in a particular country or group of countries may be appropriate. In other cases it may be desirable to organize a survey along topical lines and include several countries, such as research on monetary and banking policy in the Scandinavian countries.

The Committee therefore concluded that measures should be taken to encourage the preparation and publication of articles surveying economic research, thought, and discussion in foreign countries. The possible mechanics for such a program are several. It seemed to the Committee that an individual with an advisory committee might be appointed to administer the program and commission surveys. An economical way to elicit survey articles would be to give to scholars who are abroad on Fulbright or other research grants a supplementary grant which would enable them to extend their stays to prepare such articles. Publication might be made in regular issues of the

American Economic Review or other journals, or, if space limitations require, in supplements to journals.

Recommendation No. 1. That the Economic Association seek funds to undertake a series of surveys of economic research and discussion in various countries, such surveys to be published in the regular issues of the American Economic Review *or other journals or in periodic supplements to such journals.*

4. *Translations.* The Committee believes that further effort should be made to encourage the translation of both books and articles of major significance into the English language. It believes that there is a limited number of books, some classics and some recent, which are worthy of translation. Difficulties in raising funds to remunerate translators, to cover the cost of preparing manuscripts, and to subsidize publication have often been a major obstacle to arranging translations.

Recommendation No. 2. That the American Economic Association seek funds for the Committee on Research and Publications to facilitate the translation into English of economics books of major significance.

The Committee believes that the translations of articles appearing in foreign languages is desirable and that provisions should be made for expanding current efforts in this respect. The volumes of translations arranged by the International Economic Association have proved valuable and the Committee believes that the IEA should be encouraged to expand its efforts.

Recommendation No. 3. That the International Economic Association be encouraged to expand its program of publishing translations of articles into the English language.

The Committee also believes that the usefulness of the books of readings published by the AEA would be enhanced if editors of these were provided with funds so that they could arrange translations of foreign articles worthy of inclusion and could prepare a bibliography of relevant articles in foreign languages. Recent editors have found that current financial arrangements with the publishers already make it difficult to cover costs of preparation of the manuscript for the publisher. The Committee believes that arrangements should be made to provide more adequately for the preparation of these volumes.

Recommendation No. 4. That in the future books of readings prepared by the Research and Publications Committee of the AEA include wherever appropriate a bibliography of articles in foreign languages and that editors be encouraged to include translations of foreign articles where appropriate. Editorial funds should be made available to editors of such volumes of readings to make this possible.

5. *Training and Research in Soviet-Chinese Economics.* In the course of the discussion of specific foreign-areas about which English-speaking economists have insufficient information, the point was developed that, in the case of the

Iron Curtain countries, people with highly specialized training are required. The training of such specialists has not been proceeding at the pace necessary to keep the U. S. abreast of economic developments behind the Iron Curtain. It was the consensus of the Committee, therefore, that the AEA should consider the responsibilities of the profession to train scholars and encourage research in the economics of countries in the Soviet-Chinese orbit.

Recommendation No. 5. That it be suggested to the incoming President of the AEA that at the annual meeting in 1959, a round table discussion be held on the training of specialists in Soviet-Chinese economics and the responsibilities of the profession to promote those studies.

6. *Index to Economics Articles.* The Committee was informed that the committee in charge of the index to economics articles being prepared by the AEA is recommending that the coverage of the index be extended beyond the major journals of North America and the British Commonwealth to include English-language articles in European journals and the newer and less known journals published in English in Asia (India, Japan, and Ceylon) and the West Indies. The Committee felt that by including in the index articles in English published in those countries the Association would be furthering the objectives of international communication.

Recommendation No. 6. The Committee recommends the support of the proposal to extend the coverage of the index to economic articles to include English articles in European journals and articles in English in the newer and less known journals in Asia and the West Indies.

7. *Reviews of Foreign Books.*

Recommendation No. 7. That the editors of economic journals be informed of the profession's appreciation of their efforts to provide reviews of books in foreign languages and that the editors be urged to expand the number of such reviews.

JOHN PERRY MILLER, *Chairman*

REPORT OF THE COMMITTEE ON ECONOMIC EDUCATION

The Committee has been assured, within the last few days, of a grant of $25,000 from the Ford Foundation to enable us to go ahead with our projected study of textbooks used in secondary school courses in American history, social studies, and economics. We have named Paul Olson, of Iowa, to head the project, and, with the Committee, he is now selecting and engaging reviewers. A full report on the plan and progress of the study will be presented at the spring meeting, 1959.

Our larger project—a survey to be undertaken co-operatively with the other social sciences of "the state of the social sciences in the secondary schools"—is still in the early stages of "negotiation." We are working currently with the Committee on Secondary Schools of the ACLS and shortly we will approach the National Council on Social Studies and the SSRC. We will keep our representatives on the SSRC informed (and will seek their assistance) and will report progress at the spring meeting, 1959.

Respectfully submitted,

BEN W. LEWIS, *Chairman*

REPORT OF THE COMMITTEE ON ACADEMIC FREEDOM AND CIVIL LIBERTIES

In its last report this Committee devoted most of the space to the emphatic recognition which the Supreme Court of the United States, in the case of Dr. Paul M. Sweezy, accorded to academic freedom as an essential liberty in a free society. This was a case in which academic freedom was encroached upon, not by an academic institution, but by governmental authorities, especially the courts of the state of New Hampshire. The University of New Hampshire behaved most bravely and stood up to great pressures from the state government, from a part of the local press, and from influential alumni. Indeed, the University administration permitted a student group to invite Dr. Sweezy for another lecture even before the Supreme Court had spoken to clear him of the contempt charges. For their "responsible educational statesmanship" and, in particular, "for their action in resolutely maintaining the freedom of members of the University community to hear all points of view on controversial issues," the American Association of University Professors conferred the Alexander Meiklejohn Academic Freedom Award to the Board of Trustees and the President of the University of New Hampshire. This award caused another ruckus in the state; the Governor and the Attorney General objected to the acceptance of the Award; the Governor's Executive Council unanimously disapproved; critical newspaper editorials appeared; "the name Sweezy was the magic that turned one news item into a month of headlines"—as the *New Hampshire Alumnus* reported in May, 1958. On the other hand, the University administration received much praise from the Student Senate and the Faculty Senate for resisting "the onslaughts of adverse criticism."

During the past year no new academic freedom cases involving economists have been reported. Two earlier cases led to reports by investigating committees of the AAUP and resulted in censures of the administrations which had violated the accepted code.

Dr. Laurent R. LaVallee was an assistant professor of economics at Dickinson College, Carlisle, Pennsylvania. He was suspended and subsequently dismissed from the College after he had claimed the privileges of the Fifth Amendment as a witness before the Un-American Activities Committee of the United States House of Representatives and after he had refused to answer questions which President Edel, of Dickinson College, had asked him concerning his past associations and political beliefs. President Edel charged him with "insubordination," "incompetence," and "disloyalty," all largely on the same ground: the refusal to answer questions.

The Investigating Committee of the AAUP found some defects in the "academic due process" observed by the College administration, especially because recommendations of a Faculty Committee, which had found that the charges were not substantiated, had not been given proper consideration. It

found, moreover, that the action of the administration was not justified, because a "refusal to answer questions which arises from a sincere belief that a teacher is entitled to withhold even from his own institution his political and social views should be accorded respect and should be weighed with other factors in the determination of his fitness to teach."

Assistant Professor Bud R. Hutchinson was refused reappointment by the Alabama Polytechnic Institute upon expiration of his contract because the Board of Trustees decided that he had flouted "the known opinion of the Administration" when he wrote a letter to the editor of the student newspaper on the issue of racial integration in New York City schools. The most amazing point in this case was the view of the Board of Trustees that in taking action about the professor's "ill-advised public statements on a controversial issue" they were not really curbing academic freedom. The Investigating Committee of the AAUP commented pertinently that "if a professor must hold his tongue lest he cause an alumnus to withhold a gift, a legislator to vote against an appropriation, a student not to register, or a citizen's feelings to be ruffled, he will be free to talk only to himself."

Respectfully submitted,

FRITZ MACHLUP, *Chairman*
HOWARD R. BOWEN
FRANCIS M. BODDY

REPORT OF THE COMMITTEE ON ASSOCIATION DEFICIT

Your Committee on Association Deficit has met, examined the financial statements and records of the Association, and has concluded that the deficit for 1957 is not a matter for serious alarm. (See attached Exhibit I.) It does indicate, however, that steps should be taken to avoid the recurrence of financial problems. The 1957 deficit of $9,768 was due primarily to rising costs, mainly wages for office help and publication costs, and in particular, to the publication of the 1956 *Handbook*—the most voluminous and most useful directory the Association has yet published. For 1958 there is a surplus of $5,615. This surplus should not lead to the conclusion that the financial practices of the Association do not need modification. Some of them clearly do.

The Committee recommends that the Executive Committee should consider the following courses of action:

1. *Accrual of Handbook Costs*

The Committee recommends that steps be taken to reform the accounting practices of the Association so that the costs of the handbook may be spread over the years during which the directory is being compiled, published, and then distributed to members. The present policy of the Association has been to issue a handbook at irregular intervals. The last four were issued in 1937, 1942, 1948, and 1956.

The books of account of the Association are kept on a cash basis. As a result the bulk of the costs of the directory are charged to the year of publication. Thus, costs are inflated in those years and understated in intervening ones. This is one of the consequences of keeping books on a cash basis. An appropriate spreading of costs via accruals or reserves would tend more accurately to depict the actual costs of operation of the Association and at the same time distribute costs over the years to which they belong.

2. *Increased Economies*

The Executive Committee and the Secretary should take advantage of all possible economies in conducting the affairs of the Association, in spite of the limited yield that may come from some of the measures that are adopted. It is not believed that many economies can be realized by changes in routine operations of our offices. The Secretary's Office, so far as the Committee has been able to determine, has been efficiently and economically managed although there have been difficulties in obtaining and retaining competent personnel in a tight labor market.

As may be seen from the attached statement of income and expense, the administrative and operating expenses of the Association have gone up from $17,110 in 1948 to $39,045 in 1957, an increase of 128 per cent. In this period the aggregate for office salaries has risen from $10,167 to $31,581, or

210 per cent. This reflects both increases in rates of pay and the employment of extra help. From 1956 to 1957, the only significant increase in administrative expenses was for office salaries—again mostly due to extra help particularly on the *Handbook*. This increase was $8,541. From 1956 to 1957, printing costs went up by $24,558. Of this $15,815 was represented by the cost of the directory. If significant cuts are to be made in operating costs, it will be at the expense of publications made available to members.

There is some opinion in the Committee on the Deficit that the *Papers and Proceedings* published annually by the Association, and published in 1957 at a cost of $16,254 ($4,138 more than the year before), might either be curtailed in size or omitted altogether. It should be noted that over the years the *Papers and Proceedings* have tended to increase in size, in the number of copies issued, and in the cost of publication. In 1930, 4,300 copies of this volume containing 222 pages were issued at a cost of $1,354. In 1940, 4,900 copies of a volume of 444 pages were issued at a cost of $2,657. In 1950, 10,100 copies of a volume with 650 pages were issued at a cost of $9,685. In 1957, 12,400 copies of a volume of 754 pages were issued at a cost of $16,254. The number of copies printed conforms very closely to the total number of members and subscribers of the Association. The virtue of the *Proceedings* is that it deals with current problems and contains a record of the discussions that take place at the annual meeting. The volume also includes the reports of the business of the Association.

The *Papers and Proceedings* have been criticized because of the wide variation in the quality of the material printed, which in turn is attributable to the attempt to make the volume as complete a record of the annual meeting as is feasible and to publish it promptly. If the *Papers and Proceedings* were not published, the best articles would undoubtedly be printed in the *Review* and other journals. If this policy should be adopted, undoubtedly the costs of the printing of the *Review* would necessarily rise if the *Review* published the leading papers and the report of business meetings. Hence the financial gains by eliminating the publication of the *Proceedings* would not be net savings. Short of not printing the *Papers and Proceedings* at all, a number of alternatives should be considered: (1) each participant on the program should, as now, be given a definite space limitation, but if the limit is exceeded he should be billed for the extra printing costs; (2) a selective procedure could be introduced to keep down the size of the *Proceedings* by printing only the best papers; (3) advance arrangements for the annual program could provide for limiting more sharply than in the past the number of sessions for which the contributions are published in full.

Other sessions could be covered by summaries or abstracts. The adoption of any of these alternatives involves issues which are not exclusively financial.

Your Committee also considered the possibility of suggesting that Association publications might be printed abroad or that the type might be set abroad. If this were done, office expenses for mailing would undoubtedly increase. Whether significant gains could be achieved, the Committee does not know, but suggests that this matter be investigated by the Executive Committee.

3. *Expansion of Miscellaneous Income*

It is recommended that steps be taken promptly to increase the miscellaneous and publication income of the Association. While the Committee does not believe that the American Economic Association should attempt to extract every dollar it can make from every available source of income, it does feel that the advertising rates in the *Review* are lower than the traffic will bear. We are reliably informed that the Association can collect more from its advertising than it now does.

Up to the present time advertising in the *Review* has been limited to 32 paid pages. In addition, it is euphemistically classified as "educational." Perhaps, we should solicit or accept commercial advertising, letting the willingness of advertisers to pay our rates determine the nature of our advertising columns, continuing, of course, the reciprocal advertising with other journals. Your Committee makes these specific recommendations with respect to advertising: (1) that rates be increased on the outside and inside rear cover of the *Review;* (2) that the advertising section be expanded in size initially to 48 pages; (3) that the present restriction to "educational" advertising be eliminated; (4) that the present rates on inside pages be continued until the effect of expanding the number of pages of advertising can be evaluated; (5) that the present policy of confining all inside advertising to a self-contained section of the *Review* be continued; (6) that advertising be carried on the covers of the *Papers and Proceedings.*

No cash income has been received since 1951 from republications or from our "Reading Series." Under present arrangements the inventory is charged against the Association until it is sold. As long as we continue to publish these books, we will probably get no cash income from this source as the unrealized profits have been used to finance new issues. The Committee feels that the present cash method of accounting for these activities gives a misleading impression of the Association's position. It recommends that some attempt be made to account for these publications on an accrual basis. In addition the Committee suggests that the Executive Committee re-examine its contractual arrangements with its publishers.

The Committee desires to call attention to the fact that the annual meeting has been run at a substantial profit since 1949, except in 1951 and 1953 when the losses were small. In 1957, the net profit from the convention was $1,037. It was slightly more than this in 1956. The Committee believes that the charges and policies followed with respect to the annual meeting are both sound and praiseworthy.

Some additional income might be secured by further exploiting the sale of mailing lists. The sums to be realized would not be large and the matter should be left entirely to the discretion of the Secretary.

4. *Active Membership Campaigns*

The Committee believes that more active membership campaigns are in order. The Committee recommends that the Executive Committee arrange for

the Secretary's Office to increase its activities in this connection. The cost of extra help might be easily recouped from collections from new members.

The obligation of getting new members does not rest solely upon the Secretary's Office. It is a part of the responsibility of every member of the profession to see to it that all qualified economists belong to their professional society. Members in graduate schools can easily interest new students in joining our society. They should seriously undertake this responsibility. A modest effort on the part of every member to interest associates who do not now belong to the Association is part of his obligation to his profession.

5. *Accounting for Investment Income*

Our present cash accounting methods treat as current income not only interest and dividends but also realized capital gains. Interest and dividends alone clearly understate the Association's investment income in view of the practice of many corporations of plowing back earnings. Including realized capital gains in our income is an inadequate correction on this score. It renders recorded investment income highly erratic and makes it depend on the accidental timing of sales. (See attached Exhibits I and II.)

The Committee recognizes that a satisfactory alternative accounting procedure is hard to construct and may not be worth the trouble. It wishes to call the Executive Committee's attention to the problem of interpretation in order to make it clear that any consideration of the Association's financial position must take account of the character of our present investment income accounting.

Financing current expenses out of income from the sale of securities does not necessarily mean eating into capital. On the other hand, such profits are not necessarily available for current expenditures without eating into capital.

6. *Policy with Respect to Reserves*

Either of two policies with respect to financial reserves is possible:

First. A policy of deliberately increasing reserves over the years with a view to providing the Association with an increasing income from this source.

Second. A policy of maintaining no larger reserve than would be expedient to provide for possible emergencies or contingencies.

Your Committee believes that the second of these two policies is appropriate for a professional association. It accordingly recommends that the Association's reserve should be kept at approximately its present relation to the Association's expenses. At present the Association's investment portfolio, valued at market, is roughly one and three-quarters (1¾) times the Association's annual expenses.

7. *The Immediate Financial Outlook*

The Secretary estimates that without any allowance for profits from the sale of securities and with no new programs the prospective 1959 budget will show a deficit of about $4,000. It is our judgment that proper allowance for investment income other than interest and dividends will more than cover this deficit.

Your Committee has recommended above (Section 1) the accrual of ex-

penses for the publication of the handbook, which it believes should be about $4,000 per annum. It has also recommended increases in advertising rates and increased activities to secure new members, the outcome of which should be sufficient to meet the accrual cost of the handbook.

No estimates are available for 1960. We see no reason to anticipate any drastic change in the situation.

8. *Dues*

In view of the situation described in the preceding sections, your Committee sees no reason to recommend an increase in dues for 1960 unless the Executive Committee authorizes an expanded program of activities or decides to build up an endowment. However, the situation can easily change. If trends of the past few years continue, an increase in dues is likely to become necessary in the not too distant future. Since any increase in dues should only be made with a year's notice to the membership, your Committee recommends that the Executive Committee review the adequacy of present dues annually.

Respectfully submitted,

SIMEON E. LELAND, *Chairman*
HOWARD R. BOWEN
MILTON FRIEDMAN
BERNARD F. HALEY } Ex Officio
JAMES WASHINGTON BELL }

EXHIBIT I

Statement of Income and Expenses of the American Economic Association

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Income											
Membership dues	$28,003	$31,121	$38,462	$39,812	$41,340	$41,970	$42,991	$43,556	$47,646	$ 49,383	$ 52,242
Subscriptions	11,831	12,254	14,273	15,553	15,825	16,491	16,838	17,387	17,852	19,896	20,728
Sales	1,417	1,863	2,863	2,251	2,266	2,524	2,440	2,532	2,908	3,432	4,682
Advertising	6,829	7,775	8,048	7,424	7,066	8,019	7,543	7,017	11,128	13,236	13,724
Directory income (net)	161	1,410									
Republications income	1,000	1,000		1,854							
Sundry income					973	63	845	104	78	134	294
Dues and publications income	49,241	55,423	63,646	66,894	67,470	69,067	70,657	70,596	79,612	86,081	91,670
Interest	1,195	1,117	1,117	1,026	1,118	1,435	1,621	1,750	1,770	1,770	1,770
Dividends	2,944	3,170	3,860	4,608	3,681	3,588	2,962	3,003	3,337	3,397	3,183
Less custodian fees	128*	126*	131*	157*	179*	179*	176*	218*	249*	231*	217*
Sales of securities (net)	1,887	48		2,788	3,569	11,636	10,727	11,621	386	18,096	9,853
Investments (less fees)	5,898	4,209	4,847	8,265	8,189	16,480	15,134	16,156	5,244	23,032	14,589
Total income	55,139	59,632	68,493	75,159	75,659	85,547	85,791	86,752	84,856	109,113	106,259
Expenses											
Office Salaries	10,167	11,637	11,837	12,735	14,537	15,251	15,491	16,821	23,040	31,581	28,805
Other administrative expenses	3,237	3,275	2,610	3,604	3,942	3,630	4,479	4,538	6,234	6,254	8,456
Annual meeting	1,434	470*	431*	501	644*	130	1,766*	626*	1,861*	1,713*	1,088*
Executive Committee	1,124	1,700	1,146	1,016	1,952	1,939	1,268	1,578	1,426	2,269	2,107
Other committee expenses	1,148	864	523	583	758	1,039	342	885	801	654	626
Review moving expenses			716		477						
Administrative and operating expenses	17,110	17,006	16,402	18,439	21,022	21,989	19,814	23,196	29,640	39,045	34,233†
Review printing	19,046	20,165	24,519	20,255	24,561	24,292	25,031	25,822	28,164	33,162	33,795
Papers and Proceedings printing	8,701	7,845	9,685	11,965	13,191	10,936	13,933	12,900	12,116	16,254	15,472
Directory and *Handbook* printing	7,300		1,164	693	620	4,018	1,059	540	479	15,815	1,434
Editorial office (*Review*):											
Contributors	1,775	1,667	1,573	1,654	2,299	1,562	3,015	2,422	2,427	2,597	2,448
Editorial and clerical salaries	6,444	7,243	7,475	7,785	9,493	9,843	9,953	10,431	11,529	11,807	12,358
Other expenses (net)	566	756	563	553	652	78	78	62*	237*	599*	1,084
Publications	43,834	37,676	44,979	42,905	50,816	50,729	53,069	52,053	54,478	79,036	66,591
Total expenses	60,943	54,682	61,381	61,344	71,838	72,718	72,883	75,249	84,118	118,081	100,824
Net operating income or loss	5,804*	4,950	7,112	13,815	3,821	12,829	12,908	11,503	738	8,968*	5,435
Appropriations	600*		2,000*	1,100*			985*			800*	184
Net income or deficit	$ 6,404*	$ 4,950	$ 5,112	$12,715	$ 3,821	$12,829	$11,923	$11,503	$ 738	$ 9,768*	$ 5,619
Members	5,902	6,631	6,936	7,068	7,267	7,335	7,486	7,555	8,450	8,600	9,189
Subscribers	2,461	2,504	2,578	2,692	2,755	2,874	2,925	2,963	3,135	3,492	3,659
Totals	8,363	9,135	9,514	9,760	10,022	10,209	10,411	10,518	11,585	12,092	12,848

* Deficit figures.
† Includes [illegible]

EXHIBIT II

RELATION OF INVESTMENT INCOME BY SOURCES TO TOTAL INCOME OF THE AMERICAN ECONOMIC ASSOCIATION 1948–58: BY AMOUNTS AND PERCENTAGES

Year	Amounts				
	Total Income	Interest	Dividends	Sale of Securities	Total Investment Income
1948	$ 55,139	$1,195	$2,816	$ 1,887	$ 5,898
1949	59,632	1,117	3,044	48	4,209
1950	68,493	1,117	3,729	—	4,846
1951	75,159	1,026	4,451	2,788	8,265
1952	75,659	1,118	3,502	3,569	8,189
1953	85,547	1,435	3,409	11,636	16,480
1954	85,791	1,621	2,786	10,727	15,134
1955	86,752	1,750	2,785	11,621	16,156
1956	84,856	1,770	3,088	386	5,244
1957	109,113	1,770	3,166	18,096	23,032
1958	106,259	1,770	2,966	9,853	14,589

PERCENT OF TOTAL

Year	Total Income	Interest	Dividends	Sale of Securities	Total Investment Income
1948	100.00	2.17	5.11	3.42	10.70
1949	100.00	1.87	5.11	.08	7.06
1950	100.00	1.63	5.45	—	7.08
1951	100.00	1.37	5.92	3.71	11.00
1952	100.00	1.48	4.63	4.72	10.82
1953	100.00	1.68	3.98	13.60	19.26
1954	100.00	1.89	3.25	12.50	17.64
1955	100.00	2.02	3.21	13.39	18.62
1956	100.00	2.09	3.64	.45	6.18
1957	100.00	1.62	2.90	16.59	21.11
1958	100.00	1.67	2.79	9.27	13.73

REPORT OF THE COMMITTEE OF JUDGES FOR THE OPEN COMPETITION

By September 5, 1958, thirty-five contestants had submitted entries for the Open Competition to the Secretary. One of these contained only a summary rather than a completed paper, but the entry was nevertheless sent on to the screening committee. All other entries conformed to the rules announced in the application form, except for a delayed entry which was not received until September 18 and was not forwarded to the judges.

The first or screening committee of judges consisted of: Oscar Ornati, New School; Samuel M. Loescher, University of Indiana; G. Warren Nutter, University of Virginia; John H. Kareken, University of Minnesota; Anthony M. Tang, Vanderbilt University; and John H. Power, Williams College.

Papers were distributed among the members of the screening committee as far as possible according to the members' primary interests in the subject matter of the papers; however, some papers had to be assigned arbitrarily, especially those whose subject matter was interdisciplinary.

As was true last year, the screening committee was urged to give each paper the benefit of any doubt, since the papers would be read again by the final committee. The screening committee passed thirteen papers on for consideration by the final committee (compared with eighteen out of thirty-three in 1957). The final committee consisted of Professors William Fellner, Lloyd Reynolds, and Richard Ruggles, all of Yale University. They made their selections before November 1, and the candidates, both successful and unsuccessful, were notified immediately. The committee chose two papers for presentation at the Annual Meetings: (1) "An Empirical Measurement of the Built-in Flexibility of the Individual Income Tax," by Leo Cohen, of Kansas State College; and (2) "United States Imports and the Tariff," by Lawrence B. Krause, of Yale University.

Participants were asked to classify the subject matter of their papers under the Association's classification system. (Some subjects were difficult to classify.) The most preferred fields were: Economic History and Economic Development, with six entries; Industrial Organization, with five; Price and Income Theory, Public Finance, and International Economics, with four each.

The Secretary offers no opinion on the general quality of the entries. It is disappointing that only two papers were judged to be good enough for presentation at the annual meetings. Several of the readers expressed disappointment with the quality of papers submitted.

We apparently have a choice between two different criteria for judging a competition of this kind. One is to treat the competition primarily as a "prize" contest, with the honor of presentation going to a very few papers of distinction, good enough for publication without major alterations in a professional jour-

nal. This is in effect what we have done in the last two years. The other is to regard it as an opportunity for economists to offer papers at the annual meetings even though they were not invited to appear on the organized panels by the program chairmen whom the President of the Association has appointed. In the latter event, there might be several program sessions devoted to papers entered in the competition. A move in this direction might involve some relaxation of standards to include papers which do not exhibit finished excellence but which show promise, or those that could be developed into acceptable offerings with further work. It is the Secretary's personal belief that the Open Competition would make a better contribution to the purposes of the annual meetings if the latter objective were explicitly adopted in the future. It seems better suited than a "prize" contest to elicit papers from young or unknown members of the Association, and to encourage participation in the Association's activities by economists holding posts in small colleges or obscure organizations. We could then determine whether economists would submit enough entries meeting the minimum standards of these meetings to make it worth while to hold this opportunity open at future meetings.

James W. McKie, *Secretary*

REPORT OF THE COMMITTEE ON PROCEDURE FOR AWARDING CARNEGIE CORPORATION TRAVEL GRANTS

The Committee submits the following report.

Proposed Policy and Procedure for Administering Carnegie Corporation Travel Grants

Travel grants shall be for attendance on conferences in which economists of several nations participate and which are sponsored by international or national associations.

Economists who are officers of the sponsoring association or who are invited to present papers before the conference shall be eligible for grants.

Grants shall be limited to the round trip tourist airplane fare from New York City to the place of the conference.

Where the association sponsoring the conference makes provisions for travel grants, participants will be expected to utilize these before requesting aid of the AEA. Where it is the sponsoring agency's practice to provide only a part of the travel fare, participants may apply to the AEA for the balance. Participants whose round trip fare is paid by the sponsoring or other agency are not eligible for travel grants. Where the participant is abroad on other matters, he should apply only for round trip travel expenses from his foreign location to the site of the conference.

Those requesting travel grants shall apply to the Secretary-Treasurer, who shall refer the application to a standing committee, appointed by the President of the Association. The Committee shall consist of the President and the Secretary-Treasurer of the Association and two members selected from the Executive Committee. The appointed members shall serve for two years, excepting the original appointees, whose terms shall expire in one year and two years, respectively. When the Committee recommends that a travel grant be made, the President shall authorize the Secretary-Treasurer to make the grant.

George W. Stocking, *Chairman*
Edward S. Shaw
James Washington Bell

INSTITUTE OF INTERNATIONAL EDUCATION

REPORT OF CHAIRMAN OF ADVISORY COMMITTEE TO THE EXECUTIVE COMMITTEE OF THE AMERICAN ECONOMIC ASSOCIATION ON ECONOMICS INSTITUTES

Origin of the Institutes. In the summer and fall of 1956, Lloyd Reynolds and Kermit Gordon, of the Ford Foundation, in visits to some dozen universities, found these schools generally and substantially burdened by problems presented by foreign graduate students in economics who entered poorly prepared in economic analysis and in English. They presented their findings for discussion to a December, 1956, meeting of some twenty-five department of economics chairmen; and Seymour Harris, chairman of the chairmen, was authorized to appoint a smaller committee to discuss with the Ford Foundation the possibilities of developing proposals to meet these problems on a co-operative basis.

By the fall of 1957, this committee had formulated a proposal, which was submitted to and accepted by the Ford Foundation, with a grant of approximately $185,000. Under the proposal, three Institutes were to be held, during the summers of 1958, 1959, and 1960, for newly arrived foreign graduate students in economics and agricultural economics, to provide instruction in basic economics and in oral and written English.

Under the terms of the grant, the above committee was to be replaced by a Policy Making and Advisory Board, which is appointed by the Institute of International Education from a panel nominated by the Executive Committee of the American Economic Association. The Board, nearly the same as the original committee, now consists of Carter Goodrich (Columbia), Rendigs Fels (Vanderbilt), Michael Hoffman (International Bank), D. Gale Johnson (Chicago), Irving G. Kravis (Pennsylvania), Theodore Morgan, Chairman (Wisconsin), and Lorie Tarshis (Stanford). The IIE administers the Institutes, with the guidance and advice of the Board.

The 1958 Economics Institute. The first Economics Institute was held at the University of Wisconsin, July 6 to September 4, 1958. The Director was Wyn F. Owen (Colorado), and the full-time instructional staff, John P. Henderson (Michigan State), Gerald Sirkin (Yale), and Jack Garlington (Utah). Thirteen other people taught part time or were with the office staff.

A total of thirty-six students, from nineteen foreign countries, were enrolled. They are in residence this fall in twenty-three U.S. universities. Nine students were self-supporting; twenty-seven were on grants from governments, foundations, or other private sources or their admitting universities. Partial or complete payments were made to the Institute by a number of the students' sponsors, so that the net cost of the Institute will turn out to be considerably less than the gross cost.

Eight to ten hours a week were devoted to lectures and discussions on economic theory. In English, the best students had training for two hours a week, the poorest for twelve to thirteen hours, with main emphasis on the structure and phonology of American English. There were several guest lecturers a week and occasional visits to nearby families, factories, and farms.

Evalutions. The students had economics and English tests at the beginning and end of the session. With respect to economics: the tests indicated an average improvement of about 50 per cent of the potential improvement as measured on arrival. The staff felt that twenty-four of the students left with adequate preparation or with only "some deficiencies"; the remaining twelve had either "general deficiency" or "very serious deficiency."

With respect to English: in the opinion of the staff, there were at the beginning of the session ten students for whom language would not be a significant handicap in their graduate work; at the end, seventeen students. The numbers of those for whom language is a serious handicap were reduced from thirteen to six.

Reports on the level of achievement of each of the students were sent to their admitting universities.

The Advisory Board and the Institute of International Education judge that the first Institute was a successful venture. Its purpose and achievement was to improve substantially the ability of its students to handle graduate work. The Board and the IIE have suggested a number of minor changes that they think likely to make next year's Institute still more effective.

The 1959 Economics Institute. Next summer's Institute will be held at the University of Colorado and will be directed by Wyn Owen. It will be set up to take care of approximately fifty foreign students of economics and agricultural economics who are newly entering the United States for graduate work.

All expenses of the accepted students will be met, if necessary, under the Ford grant. Sponsoring institutions are invited to contribute funds to cover part or all of the costs incurred by the students whom they recommend for training. Further information is obtainable from, and applications on behalf of eligible candidates are welcomed by, the Institute of International Education, 1 East 67th Street, New York City.

THEODORE MORGAN, *Chairman*
Policy Making and Advisory Board

REPORT OF REPRESENTATIVE TO THE AMERICAN COUNCIL OF LEARNED SOCIETIES

The main "news" respecting the Council, for 1957-58, is of developments following receipt of grants of $3,100,000 received some two years ago—said to be the largest sum ever given for the support of humanistic studies. During 1957, the executive offices were somewhat enlarged and moved from Washington to New York City—in the building of the Carnegie Endowment for International Peace (345 E. 46th St., New York 17). A branch office is maintained in Washington. The corporation was reorganized under a new constitution and bylaws.

Probably of greatest direct concern to most members of the Council's constituent societies is the new funds available for the support of research to advance humanistic knowledge, which covers much of the fields of work of the social sciences and their organizations as well as the more narrowly humanistic languages, literatures and fine arts. Support was offered in three categories: first, a noncompetitive program of special awards of $10,000 each, given in recognition of distinguished achievement. Second, a fellowship program enabling the recipient to spend six months to a year on full-time research or intensive study, at the postdoctoral level. The third program is one of grants-in-aid, to cover supplementary expenses in connection with individual research. The ten noncompetitive awards for the first year were announced at the Council's annual meeting in January, 1958, and the second group are to be announced at the forthcoming meeting of 1959. For the other grants, numerous applications were received: for fellowships, 575, of which only 17 could be granted, ranging from $3,500 to $7,000; for grants-in-aid, there were 823 applications and 78 awards, from $350 to $3,000. All classes of awards were widely distributed geographically and among fields and institutions and economists were represented among the recipients. Full details will be published in the Annual Report, soon to appear.

For the delegate of the AEA, the outstanding incident of the past year was attendance at the annual meeting, held for the first time in the Middle West, at Indiana University at Bloomington. The usual more or less routine business of the Council was transacted including sessions of the Conference of Secretaries of the Constituent Societies, which is a distinctive feature of Council activities. Its proceedings are reported to the main organization and become a part of its record, and often suggest formal action by the Council itself. In addition, on this occasion, a truly remarkable program on "The Present-Day Vitality of the Classical Tradition" was presented to the delegates and officers, the secretaries, and a large number of invited guests. It included lectures and dramatic performances, an art exhibition, and an evening of special music. This program made the meeting a memorable event for all those privileged to be present.

Most important for the Council itself is the need for a wider diffusion of knowledge of it and its work, awakening interest in the educated public and in particular the members of its own constituent societies, now some twenty-six in number. Especially in point here are the members of the major professional associations or societies in the social sciences. Of these, the five that are constituents of the ACLS are also among the seven represented on the Social Science Research Council, which tends to some confusion of understanding. The latter Council was organized after the founding of the ACLS, which was set up to promote the interests of scholarship in general, as distinguished from natural science, whose branches already had such an organ in the National Research Council. The existence of the SSRC, functioning so well, has made the interest of the ACLS in social science somewhat secondary to that in the humanities narrowly defined, which is important in connection with funds for research projects. But there is a natural if somewhat vague specialization here, projects of a more tangible, objective, or "scientific" nature falling to the domain of the SSRC, while those having to do with the more culture-historical and philosophic aspects of social inquiry belong rather to that of the ACLS. The distinction is not sharp and calls for a co-operative spirit in the division of functions, particularly in the matter of financing, where the main reliance of both Councils is the great foundations. The relations have been maintained, on the line indicated, without serious conflict. In numerous matters there is formally joint action by both—or by the four Councils, including those for science and education; these act through a regularly constituted Conference Board of Research Councils. The ACLS is in a fairly satisfactory position, in view of the gifts first mentioned above (from the Ford Foundation and the Carnegie Corporation), supplementing other resources which had become seriously inadequate.

A look at the minutes of any monthly meeting of the Board of Directors of the ACLS will reveal a striking number and variety of calls for help from diverse sources—not least from the staff of the Council, who also see needs for which it seems to be the appropriate organ to study and appraise, and for action or getting action from the most suitable source. Typically, the lack of effective direct appeal to the public or existing agencies is as obvious as the need. The occasion which first prompted the organization of the Council, following World War I, was the call to provide for American co-operation with academies and similar bodies abroad, in promoting scholarly interests on a world scale. It still collaborates with the International Union of Academies and with other international groups engaged in scholarly research and publication. For years it has been studying the problem of effective dissemination of important material of highly specialized appeal. Many of the Council's activities involve relations with governmental agencies—the State Department, Library of Congress, and others, including Congress itself. Since the foundation of UNESCO, its activities claim a considerable amount of attention. The Council contributes support, or solicits it from other sources, for holding many small conferences and for American participation in international ones, by bringing

foreigners to this country or taking Americans abroad. Your Delegate has been increasingly impressed, through the two decades of incumbency of this position, with the usefulness of the ACLS for American culture and world cultural relations; and with the desirability of its work being better known and more appreciated, specifically by the membership of the American Economic Association.

Respectfully submitted,

FRANK H. KNIGHT

REPORT OF REPRESENTATIVE TO THE SOCIAL SCIENCE RESEARCH COUNCIL

The Social Science Research Council has continued to be active in a number of areas of interest to economists, chiefly through the functioning of various committees concerned with stimulating research in particular fields.

One of the most active of these committees is the Committee on Economic Growth, under the chairmanship of Simon Kuznets. Extension of the Committee's work for another four or five years has been made possible by a grant from the Ford Foundation. The Committee is therefore planning a series of further research conferences and is examining the feasibility of extending to other areas the studies of long-term growth which it has had under way in several West European countries, Japan, and Australia. Papers summarizing the West European studies will be presented at the 1959 meeting of the International Association for Research in Income and Wealth, and several monographs based upon the studies are to be published abroad during the coming year. It is also anticipated that publication will take place in 1959 of volumes based on the Committee's 1956 conference on the state and economic growth, its 1958 conference on the recruitment of a stable labor force in underdeveloped areas, and a 1956 seminar on theories of economic growth.

The Committee on Analysis of Economic Census Data anticipates the completion during the coming year of its projects on the industrial structure of large diversified firms (Carl Kaysen) and on changes in the geographic location of manufacturing industries (Victor Fuchs). Studies of price-cost behavior (Richard and Nancy Ruggles) and of industrial concentration (Ralph Nelson) are proceeding, and the Committee is continuing its attempts to initiate studies of distribution, industry boundaries, and several other proposed topics. The new volume on Historical Statistics of the United States, whose preparation has been under way with the advice of a committee under the chairmanship of G. H. Evans, Jr., is scheduled for publication next August. Five additional census monographs, including *The Changing Population of United States*, by Conrad and Irene Taeuber, *The Older Population of the United States*, by Henry D. Sheldon, and *The American Labor Force*, by Gertrude Bancroft, were published during 1958; and plans were made for a new committee on population census monographs which will examine the desirability of initiating a somewhat more restricted serograph series based on the results of the 1960 census.

The principal activity of the Committee on the Family and Economic Behavior was the cosponsorship with Consumer Behavior, Inc., of a conference at the University of Michigan on models of household decision making. A conference on economic research relating to national security was held by the Committee on National Security Policy Research, which will during the next year or two give increasing attention to research on economic problems and

may be able to offer a number of grants to qualified economists. The committees on Agricultural Economics and on Business Enterprise Research were being terminated toward the end of the year but with the hope that at least the second of these may be replaced a little later.

Plans were made late in the year for a conference in 1959 on the current state of our knowledge regarding the factors making for stability and instability in the American economy. James Duesenberry and Otto Eckstein have prepared a preliminary paper for the conference. Other undertakings which are in relatively early stages include a new committee on Mathematics in Social Science Research, of which Carl Christ is a member, a committee on urbanization research, whose members include Raymond Vernon, a conference group on the measurement of social change, and an exploration by Charles Berry of the practicality of planning a continuing national research sample which would be available to economists interested in family expenditure and anticipation data as well as to other social scientists. The possibility of a conference on organization theory is also being explored.

A number of economists continued to receive assistance under the Council's fellowship and grant-in-aid programs, and the Committee on International Conference Travel Grants provided aid to several of those who attended the International Conference of Agricultural Economists at Mysore and the International Statistical Institute at Brussels. For 1959 this Committee, of which John Perry Miller is now a member, is offering a number of grants to facilitate attendance at the International Institute of Public Finance and the round table which it is assumed that the International Economic Association will organize.

Joseph Spengler, of Duke University, has been elected chairman of the Council's Committee on Problems and Policy.

Respectfully submitted,

R. A. GORDON

REPORT OF REPRESENTATIVE TO THE NATIONAL BUREAU OF ECONOMIC RESEARCH

In 1958, the National Bureau of Economic Research added twelve titles to its list of publications and made substantial progress on a wide variety of research projects. It was not so much a year of initiating new projects as of carrying forward work previously begun in many fields. Six additional reports were in press at the end of the year and eleven more had been approved for publication and were soon to go to press, indicating a substantial output of reports for 1959.

Since it may be helpful to economists to know more specifically concerning the status of various Bureau projects, they are listed below merely by title and author.

Reports in Press, December 31, 1958

International Financial Transactions and Business Cycles, by Oskar Morgenstern.

The Postwar Rise of Mortgage Companies, by Saul B. Klaman.

Basic Facts on Productivity Change, by Solomon Fabricant.

The Role of Middleman Transactions in World Trade, by Robert M. Lichtenberg.

Freight Transportation in the Soviet Union: A Comparison with the United States, by Ernest W. Williams, Jr.

Capital in Transportation, Communications, and Public Utilities: Its Formation and Financing, by Melville J. Ulmer.

Reports Approved for Publication and Soon to Go to Press

Trade Balances during Business Cycles: The American and British Experience, 1879-1955, by Ilse Mintz.

Merger Movements in American Industry, 1895-1956, by Ralph L. Nelson.

City Expenditures in the United States, by Harvey E. Brazer.

Wages in Germany, 1871-1945, by Gerhard Bry.

Personal Deductions in the Individual Income Tax, by C. Harry Kahn.

Wages and Earnings in the United States, 1860-1890, by Clarence D. Long.

The Quality and Economic Significance of Anticipations Data (papers and proceedings of the Conference organized and held on the initiative of the Universities-National Bureau Committee for Economic Research).

Trends in the American Economy in the Nineteenth Century (Studies in Income and Wealth, Volume 24).

Statistical Measures of Corporate Bond Financing Since 1900, by W. Braddock Hickman.

The Postwar Market for State and Local Government Securities, by Roland I. Robinson.

Capital in Manufacturing and Mining: Its Formation and Financing, by Daniel Creamer, Sergei P. Dobrovolsky, and Israel Borenstein.

STUDIES IN ADVANCED STAGES OF PREPARATION

Studies in Business Cycles
- Business Cycle Indicators, by Geoffrey H. Moore (editor)
- Money Supply and Business Cycles, by Milton Friedman
- Postwar Cycles in Manufacturers' Inventories, by T. M. Stanback, Jr.
- Changes in Labor Cost during Cycles in Production and in Business, by Thor Hultgren
- Orders and Activity in Manufacturing Industries, by Victor Zarnowitz

Studies in National Income, Consumption and Capital Formation
- Trends in Government Financing, by Morris A. Copeland
- Capital in the American Economy: Its Formation and Financing, Summary Volume, by Simon Kuznets
- The Mobility of Capital in Manufacturing Industries, by George J. Stigler
- The Distribution of Wealth According to Estate Tax Returns, 1953, by Robert J. Lampman
- Analyses of Consumers Union Members Buying Plans, by F. Thomas Juster

Studies in Economic Growth
- Trends in Real Wages in Manufacturing, 1890-1914, by Albert Rees
- Productivity Trends in America, by John W. Kendrick
- Long Swings in United States Economic Growth, by Moses Abramovitz
- Long Swings in Canadian Economic Growth, by Kenneth A. H. Buckley
- Economic Growth in the United States before 1860, by Douglass North
- Diversification and Integration in American Industry, by Michael Gort

Studies in Banking and Finance
- The Postwar Mortgage Market, by Saul Klaman
- Quarterly Flow-of-Funds through the Financial Markets, 1953-55, by Morris Mendelson
- Capital Financing: Sources of Funds, by Michael Gort
- The Market for Corporate Securities and Loans, by Eli Shapiro
- The Market for U. S. Government Securities, by Roland I. Robinson and Morris Mendelson

Studies in Government Activity and Finances
- Housing Issues in Economic Stabilization Policy, by Leo Grebler
- The Individual Income Tax, by Lawrence H. Seltzer
- Dividends under the Personal Income Tax, by Daniel M. Holland

Studies in International Economic Relations and Foreign Economies
- Structure of World Trade and Payments, by Herbert B. Woolley, Walther P. Michael, Cornelius Dwyer, and Herman Karreman
- British Government Expenditure, 1890-1954, by Alan T. Peacock
- Economic Growth of the Soviet Union, by G. Warren Nutter and Associates

Last year's report gave a description of certain new projects:
Quality of Credit in Booms and Depressions

Analysis of Consumer Purchase Plans
Application of Electronic Computers to Analysis of Economic Statistics
Investment in Education
Small Business Financing
Economics of Pensions

All these projects are now active. In connection with the study of the use of electronic computers, the International Business Machines Corporation and the Sperry Rand Corporation co-operated with the National Bureau in 1957 and provided machine and programming time. In 1958 the International Business Machines Corporation approved plans to aid the project further by providing additional 704 and other machine and programming time. The work is being supported also by a grant from the National Science Foundation. An Advisory Committee of distinguished statisticians and mathematicians has been appointed to suggest new projects, review procedures, and otherwise aid in developing the program.

Work in the economics of pensions involves two studies. The first is *The Impact of Public and Private Pension Systems on Saving and Investment,* described in last year's report. To it has been added a study of *Redistributive Effects of Pensions* which will focus on two aspects of income redistribution that result from the transfer operations of pension programs: (1) redistribution among income classes through pension contributions and benefits, current and future; and (2) redistribution of purchasing power from the working population to the retired aged.

One new Bureau project is by Arthur F. Burns and Geoffrey H. Moore, who are collaborating on a study designed to provide a broad account of the economic processes that give rise to business cycles. This study will draw heavily on the earlier work of the National Bureau on business cycle phenomena. A general volume on business cycles is planned, to be written so that laymen as well as professional economists can profit from it. Initial work is concentrating on the characteristic developments during recovery periods.

New projects on which research associates are working, and the associates appointed for 1957-58 and for 1958-59, are:

1957-58 Robert J. Lampman (University of Washington), Distribution of Wealth and Income
F. Thomas Juster (Amherst College), Consumer Purchase Plans
1958-59 Richard T. Selden (Vanderbilt University), Interest Rates and Business Cycles

Universities-National Bureau Program—Conferences and Related Activities

The Universities-National Bureau Committee for Economic Research, enlarged to include twenty-nine universities offering graduate work in economics and emphasizing research, has been extended for the four-year period ending June 30, 1962. Twenty-nine universities accepted the invitation to participate in the organization and work of the Committee.

The eleventh Special Conference under the sponsorship of the Committee was held in December, 1958. It was devoted to interrelations of demographic and economic change. Subjects for future conferences that are being explored are: (1) public finance; (2) economics of marketing and distribution; (3) monetary economics and capital financing; and (4) wages and the labor market.

A Special Conference on Comparative Economic Growth and Structure was held in June-July, 1958. Two sessions were held—one at Princeton and one at Washington. It was devoted to a review of the state of knowledge on economic growth and to the exploration of the needs for research. Papers prepared for the Conference dealt with different approaches to the study of economic growth. An exploratory report utilizing the papers presented and the discussions at the Conference is being drafted for circulation to specialists in the field and subsequently for publication.

The 1958 meeting of the Conference on Research in Income and Wealth was held in October and devoted to output, input, and productivity.

Directors, Officers, and Staff. V. W. Bladen was elected Director by appointment from the University of Toronto to fill the unexpired term of G. A. Elliott who resigned to accept an appointment as a member of the Tariff Board of Canada.

Walter W. Heller, Maurice W. Lee, and Lloyd G. Reynolds were elected from the University of Minnesota, the University of North Carolina, and Yale University to succeed R. L. Kozelka, Clarence Heer, and E. Wight Bakke whose terms expired.

Respectfully submitted,

WILLARD L. THORP

REPORT OF REPRESENTATIVE TO THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Much of the action of the Council of the AAAS at its meetings in December, 1958, as usual, concerned matters of routine. Among the less routine matters that are of special concern to the American Economic Association is the arrangement made for the continuation of the work of the former *ad hoc* committee on the social aspects of science by a new, seven-member standing Committee on Science in the Promotion of Human Welfare, simultaneously with provision for a new, five-member Committee on Co-operation among Scientists and a new Committee on Public Understanding of Science, the latter to take over the functions of the former Committee on Public Information and Science. These committees are to receive suggestions from the membership, submitted in response to an invitation published annually in *Science*, in addition to considering ideas developed within the Committee and are to maintain an appropriate program of activities financed by a budget approved by the Board of Directors. The program suggested by the predecessor *ad hoc* committee included the selection of problems for study, selection of an expert committee or other appropriate agency for the study of the problem, and the organization through the AAAS staff of an appropriate popularization of the results, to be distributed in pamphlet or other suitable form. It is not clear, however, to what extent the new Committee is expected to adhere to this recommendation, and I have received no subsequent information concerning the composition of this Committee or of its subsequent action.

In any event, it might be appropriate, if the Executive Committee of the American Economic Association should feel so impelled, to submit to this Committee whatever projects on the economic aspects of science suggest themselves as interesting or promising, either directly or through their Council representative.

The other major matter of possible interest to economists is contained in a resolution growing out of a set of proposed resolutions submitted by the American Association of Scientific Workers. The Resolutions and Agenda Committee at first proposed to refer these resolutions to the Board of Directors for re-referral to appropriate committee for action, but, at the prompting of your representative, seconded by Margaret Mead, it was voted to ask the Committee to work over the resolutions and submit them at the second session of the Council, which was done. One of these reworked resolutions, after citing the success of the International Geophysical Year, urges similar world-wide attacks on other major problems, among which are mentioned population problems, health problems, and again the social consequences of science.

Other resolutions of general interest included a resolution urging the facilitation of the issuance of visas and credentials so as to permit unimpeded

travel of scientists throughout the world, a resolution expressing hope for the success of the Geneva Conference negotiations on nuclear weapons test control, a resolution welcoming the National Defense Education Act of 1958, without, however, any mention of the oath requirements attached to it.

Note may also be taken with satisfaction of the re-election of Donald P. Ray as secretary of Section K, the election of Philip M. Hauser as chairman of Section K, and the selection of Kingsley Davis as member-at-large of the Council from Section K.

It was reported that a special meeting on Support of Basic Research in the United States is to be held in New York at the Rockefeller Institute on May 14, 15, and 16, under the cosponsorship of the AAAS, the Sloan Foundation, and the National Academy of Sciences.

Economists may also be interested in the possible implications for the mathematical training of prospective social science students of the new program of the National Science Foundation for fellowships for summer study or research by high school and science mathematics teachers. This program is to be administered in part by the AAAS, and while there has thus far been no indication in this direction, there is at least the remote possibility that some of this effort might be directed in a manner to improve the relevance of early mathematical training to the needs of social science.

As a component in the program of meetings, economics of course made only a very modest showing, in view of the superior drawing power of Chicago. Nevertheless, those who for one reason or another found themselves in Washington rather than Chicago were able to hear some very stimulating papers by Kenneth Boulding, Gale Johnson, J. J. Spengler, and others. In addition to this, there were opportunities for visiting some allied fields that might be overlooked at the more narrowly focused meetings at Chicago. The programs of the Society for General Systems Research and of the Operations Research Society of America are among those that might be missed in a different context.

Respectfully submitted,

WILLIAM VICKREY

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OF THE

AMERICAN ECONOMIC ASSOCIATION

1959

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Price per volume, $4.00.

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